

ABSTRAK

IDENTIFIKASI LAPISAN BAWAH PERMUKAAN MENGGUNAKAN METODE *GROUND PENETRATING RADAR* (GPR) DI MUARA SUNGAI WAY SEPUTIH, LAMPUNG TENGAH

Oleh

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Penelitian ini bertujuan untuk mengidentifikasi lapisan sedimen bawah permukaan di Muara Sungai Way Seputih, Kabupaten Lampung Tengah, menggunakan metode *Ground Penetrating Radar* (GPR). Data diperoleh melalui tiga lintasan pengukuran dengan antena 100 Mhz dan diolah melalui tahapan, *dewow*, *gain*, *background removal*, *bandpass filter*, dan *time depth conversion*. Interpretasi radargram mengindikasikan tiga lapisan utama, yaitu kolom air, sedimen pasir jenuh air, dan batu gamping sebagai batuan dasar. Ketebalan sedimen berkisar 9-25 meter dan cenderung meningkat ke arah laut, mencerminkan proses sedimentasi yang aktif akibat pengaruh aliran sungai dan pasang surut. Pola refleksi yang terlihat juga menggambarkan dinamika pengendapan yang dipengaruhi oleh interaksi antara aliran sungai, arus pasang surut, serta transportasi material sedimen. Hasil penelitian menunjukkan bahwa GPR efektif dalam memetakan struktur sedimen bawah permukaan serta memberikan informasi penting bagi pengelolaan lingkungan pesisir di wilayah muara.

Kata Kunci: *Ground Penetrating Radar*, Ketebalan Sedimen, Muara Sungai, Way Seputih

ABSTRACT

IDENTIFICATION OF SUBSURFACE LAYERS USING GROUND PENETRATING RADAR (GPR) IN THE ESTUARY OF THE WAY SEPUTIH RIVER, CENTRAL LAMPUNG

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This study aims to identify subsurface sediment layers in the estuary of the Way Seputih River, Central Lampung Regency, using the Ground Penetrating Radar (GPR) method. Data were collected from three survey lines using a 100 MHz antenna and processed through several stages, including dewow, gain, background removal, bandpass filter, and time depth conversion. Interpretation of the radargrams indicates three main layers: the water column, water-saturated sand sediment, and limestone as the bedrock. The sediment thickness ranges from 9 to 25 meters and tends to increase toward the sea, reflecting active sedimentation influenced by river flow and tidal processes. The observed reflection patterns also illustrate dynamic deposition controlled by interactions between river discharge, tidal currents, and sediment transport. The results show that GPR is effective for mapping subsurface sediment structures and provides important information for coastal environmental management in the estuarine area.

Key word: Ground Penetrating Radar, Sediment Thickness, River Estuary, Way Seputih