ABSTRAK

Donny Danang Manumono, (2022)

MENENTUKAN DERAJAT KONSOLIDASI BERDASARKAN PEMBACAAN ALAT VIBRATING WIRE PIEZOMETER PADA PROYEK BENDUNGAN SEMANTOK

(STUDI KASUS : PROYEK BENDUNGAN SEMANTOK STA 1+350)

Dosen Pembimbing 1 : Ir. Agata Iwan Candra, ST, MT
Dosen Pembimbing 2 : Heri Wahyudiono, ST, MT

Bendungan semantok direncanakan akan menampung debit air sebesar 32.673.519 m3 yang mana dapat berguna sebagai cadangan air baku dan daerah pariwisata. Dalam membangun sebuah bendungan perlu adanya alat instrumentasi yang dapat memonitoring perilaku bendungan dari semasa konstruksi sampai beroperasi seperti yang akan dibahas dalam tugas akhir ini adalah *Vibrating Wire Piezometer* tipe *Soil Instrument*. Tujuan dari skripsi ini adalah mengetahui besarnya derajat konsolidasi yang dicapai akibat adanya perbedaan tekanan air pori. Pengumpulan data dilakukan dengan cara mengumpulkan data lapangan hasil monitoring *Vibrating Wire Piezometer* dari PT. Heksaline Geo Service meliputi data kalibrasi, data monitoring VWP E-01, VWP E-02, VWP E-03, VWP E-04, VWP E-05, VWP E-06, VWP E-07 dan elevasi timbunan. Besarnya tekanan air pori meningkat seiring bertambahnya kenaikan elevasi timbunan sehingga tekanan air pori ekses dapat dihitung dengan hasil VWP E-01 = 0,36 ton/m^2, VWP E-02 = 0,509 ton/m^2, VWP E-03 = 0,598 ton/m^2, VWP E-04 = 0,314 ton/m^2, VWP E-05 = 0,669 ton/m^2, VWP E-06 = 0,620 ton/m^2 dan VWP E-07 = 0,444 ton/m^2. Derajat konsolidasi yang tercapai pada masing – masing piezometer adalah VWP E-01 = 93%, VWP E-02 = 90%, VWP E-03 = 91%, VWP E-04 = 95%, VWP E-05 = 91%, VWP E-06 = 90% dan VWP E-07 = 89%.

Kata Kunci : Tekanan Air Pori Ekses, Derajat Konsolidasi, *Vibrating Wire Piezometer*

ABSTRACT

Donny Danang Manumono, (2022)

DETERMINING THE DEGREE OF CONSOLIDATION BASED ON THE READINGS OF THE VIBRATING WIRE PIEZOMETER DEVICE ON THE SEMANTOK DAM PROJECT
(CASE STUDY: SEMANTOK STA 1 +350 DAM PROJECT)

Supervisor 1 : Ir. Agata Iwan Candra, ST, MT
Supervisor 2 : Heri Wahyudiono, ST, MT

The Semantok Dam is planned to accommodate a water discharge of 32,673,519 m3 which can be used as a raw water reserve and tourism area. In building a dam, it is necessary to have an instrumentation tool that can monitor the behavior of the dam from construction to operation. As discussed in this final project, the Vibrating Wire Piezometer type Soil Instrument. The purpose of this thesis is to determine the degree of consolidation achieved due to differences in pore water pressure. Data collection is done by collecting field data from the monitoring results of the Vibrating Wire Piezometer from PT. Heksaline Geo Service includes calibration data, monitoring data for VWP E-01, VWP E-02, VWP E-03, VWP E-04, VWP E-05, VWP E-06, VWP E-07 and embankment elevation. The amount of pore water pressure increases with the increase in embankment elevation so that the excess pore water pressure can be calculated by the results of VWP E-01 = 0.36 ton/m^2, VWP E-02 = 0.509 ton/m^2, VWP E-03 = 0.598 tons/m^2, VWP E-04 = 0.314 tons/m^2, VWP E-05 = 0.669 tons/m^2, VWP E-06 = 0.620 tons/m^2 and VWP E-07 = 0.444 tons /m^2. The degree of consolidation achieved on each piezometer is VWP E-01 = 93%, VWP E-02 = 90%, VWP E-03 = 91%, VWP E-04 = 95%, VWP E-05 = 91%, VWP E-06 = 90% and VWP E-07 = 89%. the construction period.

Keyword *: Excess Pore Water Pressure, Degrees of Consolidation, Vibrating Wire Piezometer*