

LAMPIRAN

Lampiran 1. Perhitungan BOD

$$\text{BOD} = \text{DO}_0 - \text{DO}_5$$

1. Sampel setelah penambahan rangkaian filter

Simplo

$$\begin{aligned}\text{BOD} &= \text{DO}_0 - \text{DO}_5 \\ &= 1.35 \text{ mg/L} - 0.90 \text{ mg/L} \\ &= 0.45 \text{ mg/L}\end{aligned}$$

Duplo

$$\begin{aligned}\text{BOD} &= \text{DO}_0 - \text{DO}_5 \\ &= 1.35 \text{ mg/L} - 0.90 \text{ mg/L} \\ &= 0.45 \text{ mg/L}\end{aligned}$$

Triplo

$$\begin{aligned}\text{BOD} &= \text{DO}_0 - \text{DO}_5 \\ &= 1.45 \text{ mg/L} - 0.90 \text{ mg/L} \\ &= 0.55 \text{ mg/L}\end{aligned}$$

$$\text{Rata-rata BOD} = \frac{0.45+0.45+0.55}{3} = 1.45 \text{ mg/L}$$



Lampiran 2. Perhitungan COD

$$\text{COD (mg/L O}_2) = \frac{(A-B) \times M \times 8000}{\text{mL contoh uji}}$$

1. Sampel setelah penambahan rangkaian filter

Siplo

$$\begin{aligned}\text{COD (mg/L O}_2) &= \frac{(A-B) \times M \times 8000}{\text{mL contoh uji}} \\ &= \frac{(1-0.6) \times 0.11 \times 8000}{7.5} \\ &= 46.9 \text{ mg/L}\end{aligned}$$

Duplo

$$\begin{aligned}\text{COD (mg/L O}_2) &= \frac{(A-B) \times M \times 8000}{\text{mL contoh uji}} \\ &= \frac{(1-0.5) \times 0.11 \times 8000}{7.5} \\ &= 58.6 \text{ mg/L}\end{aligned}$$

Triplo

$$\begin{aligned}\text{COD (mg/L O}_2) &= \frac{(A-B) \times M \times 8000}{\text{mL contoh uji}} \\ &= \frac{(1-0.6) \times 0.11 \times 8000}{7.5} \\ &= 46.9 \text{ mg/L}\end{aligned}$$

$$\text{Rata-rata COD} = \frac{46.9+58.6+46.9}{3} = 50.8 \text{ mg/L}$$

Lampiran 3. Perhitungan Total Suspended Solid (TSS)

$$\% \text{ TSS } \left(\frac{\text{mg}}{\text{L}} \right) = \frac{(A-B) \times 1000}{\text{Volume sampel (mL)}}$$

1. Sampel setelah penambahan rangkaian filter

$$\begin{aligned} \% \text{ TSS } \left(\frac{\text{mg}}{\text{L}} \right) &= \frac{(A-B) \times 1000}{\text{Volume sampel (mL)}} \\ &= \frac{(0.75-0.5) \times 1000}{25} \\ &= 10 \text{ mg/L} \end{aligned}$$



Lampiran 4. Perhitungan Efisiensi

$$\begin{aligned}
 1. \text{ Efisiensi TDS} &= \frac{\text{Sebelum penambahan} - \text{setelah penambahan}}{\text{sebelum penambahan}} \times 100\% \\
 &= \frac{230 - 2.45 \text{ mg/L}}{230 \text{ mg/L}} \times 100\% \\
 &= 98.9\%
 \end{aligned}$$

$$\begin{aligned}
 2. \text{ Efisiensi TSS} &= \frac{\text{Sebelum penambahan} - \text{setelah penambahan}}{\text{sebelum penambahan}} \times 100\% \\
 &= \frac{30 - 10 \text{ mg/L}}{30 \text{ mg/L}} \times 100\% \\
 &= 66.6\%
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Efisiensi Kekeruhan} &= \frac{\text{Sebelum penambahan} - \text{setelah penambahan}}{\text{sebelum penambahan}} \times 100\% \\
 &= \frac{4 - 0.34 \text{ NTU}}{4 \text{ NTU}} \times 100\% \\
 &= 91.5\%
 \end{aligned}$$

$$\begin{aligned}
 4. \text{ Efisiensi BOD} &= \frac{\text{Sebelum penambahan} - \text{setelah penambahan}}{\text{sebelum penambahan}} \times 100\% \\
 &= \frac{77 - 1.45 \text{ mg/L}}{77 \text{ mg/L}} \times 100\% \\
 &= 98.1\%
 \end{aligned}$$

$$\begin{aligned}
 5. \text{ Efisiensi COD} &= \frac{\text{Sebelum penambahan} - \text{setelah penambahan}}{\text{sebelum penambahan}} \times 100\% \\
 &= \frac{334 - 50.8 \text{ mg/L}}{334 \text{ mg/L}} \times 100\% \\
 &= 84.7\%
 \end{aligned}$$

Lampiran 5. Dokumentasi

Proses pengambilan sampel



Proses pengecekan pH dan Suhu

Proses Pendinginan sampel sebelum
diuji di laboratoriumProses Pengujian di Laboratorium PT.
Balindo



Proses Refluks COD



Proses Titrasi

