

## LAMPIRAN B PERHITUNGAN

### 1. Perhitungan Normalitas Ferro Ammonium Sulfat (FAS)

Rumus Mencari Normalitas FAS

$$N \text{ Fe(NH)}_4\text{(SO}_4\text{)}_2 = \frac{\text{ml K}_2\text{Cr}_2\text{O}_7 \times 0,25}{\text{ml standarisasi dengan Fe(NH)}_4\text{(SO}_4\text{)}_2}$$
$$N \text{ Fe(NH)}_4\text{(SO}_4\text{)}_2 = \frac{5 \text{ ml} \times 0,25}{23 \text{ ml}}$$
$$N \text{ Fe(NH)}_4\text{(SO}_4\text{)}_2 = 0.0543$$

### 2. Perhitungan COD

Rumus mencari COD :

$$COD \left( \frac{mgO_2}{l} \right) = \frac{(a - b) \times N_{FAS} \times 8000}{ml \text{ sampel}}$$

( sumber : International Organization for Standardization)

Keterangan :

a = ml FAS untuk titran blanko

b = ml FAS untuk titran sampel

#### a. Penentuan COD sampel pertama (EM-4 = 500ml)

$$COD \left( \frac{mgO_2}{l} \right) = \frac{(2.5 \text{ ml} - 0.3 \text{ ml}) \times 0.0543 \text{ N} \times 8000}{2.5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = \frac{955,68}{2,5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = 382,27 \text{ mg/L}$$

#### b. Penentuan COD sampel kedua (EM-4 = 600ml)

$$COD \left( \frac{mgO_2}{l} \right) = \frac{(2.5 \text{ ml} - 0.4 \text{ ml}) \times 0.0543 \text{ N} \times 8000}{2.5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = \frac{912,24}{2,5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = 364,89 \text{ mg/L}$$

#### c. Penentuan COD sampel ketiga (EM-4 = 700ml)

$$COD \left( \frac{mgO_2}{l} \right) = \frac{(2.5 \text{ ml} - 0.5 \text{ ml}) \times 0.0543 \text{ N} \times 8000}{2.5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = \frac{868,8}{2.5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = 347,25 \text{ mg/L}$$

**d. Penentuan COD sampel keempat (EM-4 = 800ml)**

$$COD \left( \frac{mgO_2}{l} \right) = \frac{(2.5 \text{ ml} - 0.5 \text{ ml}) \times 0.0543 \text{ N} \times 8000}{2.5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = \frac{868,8}{2.5 \text{ ml}}$$

$$COD \left( \frac{mgO_2}{l} \right) = 347,25 \text{ mg/L}$$

**3. Perhitungan TSS**

Rumus mencari Nilasi TSS

$$TSS \left( \frac{mg}{L} \right) = \frac{A - B \times 1000}{V}$$

(Standard Method for the Examination of Water and Wastewater, 16<sup>th</sup> Edition, p. 96, Method 209C. (1895)

Keterangan :

A = berat kertas saring + residu kering (mg)

B = berat kertas saring (mg)

V= Volume Contoh (mL)

**a. Penentuan TSS sampel pertama (EM-4 = 500)**

$$TSS \left( \frac{mg}{L} \right) = \frac{A - B \times 1000}{V}$$

$$TSS \left( \frac{mg}{L} \right) = \frac{0.32 - 0.31 \times 1000}{1}$$

$$TSS \left( \frac{mg}{L} \right) = 10 \text{ mg/L}$$

**b. Penentuan TSS sampel kedua (EM-4 = 600)**

$$TSS \left( \frac{mg}{L} \right) = \frac{A - B \times 1000}{V}$$

$$TSS \left( \frac{mg}{L} \right) = \frac{0.31 - 0.30 \times 1000}{1}$$

$$TSS \left( \frac{mg}{L} \right) = 10 \text{ mg/L}$$

**c. Penentuan TSS sampel ketiga (EM-4 = 700)**

$$TSS \left( \frac{mg}{L} \right) = \frac{A - B \times 1000}{V}$$

$$TSS \left( \frac{mg}{L} \right) = \frac{0.30 - 0.29 \times 1000}{1}$$

$$TSS \left( \frac{mg}{L} \right) = 10 \text{ mg/L}$$

**d. Penentuan TSS sampel keempat (EM-4 = 800)**

$$TSS \left( \frac{mg}{L} \right) = \frac{A - B \times 1000}{V}$$

$$TSS \left( \frac{mg}{L} \right) = \frac{0.30 - 0.29 \times 1000}{1}$$

$$TSS \left( \frac{mg}{L} \right) = 10 \text{ mg/L}$$