

LAMPIRAN

1. Hasil Pengamatan

Tabel Uji Organoleptik

No.	Menit ke-	Bau	Warna
1.	0	Tidak berbau	Bening
2.	15	Tidak berbau	Bening
3.	30	Tidak berbau	Bening
4.	45	Tidak berbau	Bening
5.	60	Tidak berbau	Bening

Tabel Standarisasi Larutan KMnO_4

Volume $\text{H}_2\text{C}_2\text{O}_4$ (ml)	Volume KMnO_4 (ml)	Perubahan Warna	
		Sebelum	Setelah
9	2	Bening	Pink ungu
9	1,9	Bening	Pink ungu
9	1,9	Bening	Pink ungu

Tabel Standarisasi Larutan KMnO_4

No	Waktu (menit)	Volume air sampel (ml)	Volume KMnO_4 (ml)	pH	Perhitungan % Fe^{2+}	Perubahan Warna
1	0	9	0,4	6	1,290 %	Bening ke Pink
		9	0,4	6		Bening ke Pink
		9	0,4	6		Bening ke Pink
2	15	9	0,3	7	0,967 %	Bening ke Pink
		9	0,3	7		Bening ke Pink
		9	0,3	7		Bening ke Pink
3	30	9	0,3	7	0,751 %	Bening ke Pink
		9	0,2	7		Bening ke Pink
		9	0,2	7		Bening ke Pink
4	45	9	0,2	7	0,645 %	Bening ke Pink
		9	0,2	7		Bening ke Pink
		9	0,2	7		Bening ke Pink
5	60	9	0,2	7	0,429 %	Bening ke Pink
		9	0,1	7		Bening ke Pink
		9	0,1	7		Bening ke Pink

2. Perhitungan

2.1 Standarisasi Larutan KMnO_4

$$\begin{aligned}\text{Volume KMnO}_4 \text{ rata-rata} &= \frac{2+1,9+1,9}{3} \\ &= 1,93 \text{ ml}\end{aligned}$$

Sehingga,

$$\begin{aligned}[\text{KMnO}_4] &= \frac{FP \times \text{berat H}_2\text{C}_2\text{O}_4}{\text{Volume KMnO}_4 \times BE \text{ H}_2\text{C}_2\text{O}_4} \\ &= \frac{\frac{9}{100} \times 900}{1,93 \times 45} \\ &= 0,933 \text{ N}\end{aligned}$$

2.2 Analisa Kadar Fe^{2+}

- Variabel menit ke- 0

$$\begin{aligned}\text{Volume KMnO}_4 \text{ rata-rata} &= \frac{0,4+0,4+0,4}{3} \\ &= 0,4 \text{ ml}\end{aligned}$$

$$\begin{aligned}\% \text{ Fe}^{2+} &= \frac{FP \times \text{Volume KMnO}_4 \times N \text{ KMnO}_4 \times BE \text{ Fe}^{2+} \times 100\%}{\text{berat sampel}} \\ &= \frac{\frac{100}{9} \times 0,4 \times 0,933 \times 28}{9000} \times 100\% \\ &= 1,290 \%\end{aligned}$$

- Variabel menit ke- 15

$$\begin{aligned}\text{Volume KMnO}_4 \text{ rata-rata} &= \frac{0,3+0,3+0,3}{3} \\ &= 0,3 \text{ ml}\end{aligned}$$

$$\begin{aligned} \% Fe^{2+} &= \frac{FP \times Volume KMnO_4 \times N KMnO_4 \times BEFe^{2+} \times 100\%}{berat sampel} \\ &= \frac{\frac{100}{9} \times 0,3 \times 0,933 \times 28}{9000} \times 100\% \\ &= 0,967 \% \end{aligned}$$

- Variabel menit ke- 30

$$\begin{aligned} Volume KMnO_4 \text{ rata-rata} &= \frac{0,3+0,2+0,2}{3} \\ &= 0,233 \text{ ml} \end{aligned}$$

$$\begin{aligned} \% Fe^{2+} &= \frac{FP \times Volume KMnO_4 \times N KMnO_4 \times BEFe^{2+} \times 100\%}{berat sampel} \\ &= \frac{\frac{100}{9} \times 0,233 \times 0,933 \times 28}{9000} \times 100\% \\ &= 0,751 \% \end{aligned}$$

- Variabel menit ke- 45

$$\begin{aligned} Volume KMnO_4 \text{ rata-rata} &= \frac{0,2+0,2+0,2}{3} \\ &= 0,2 \text{ ml} \end{aligned}$$

$$\begin{aligned} \% Fe^{2+} &= \frac{FP \times Volume KMnO_4 \times N KMnO_4 \times BEFe^{2+} \times 100\%}{berat sampel} \\ &= \frac{\frac{100}{9} \times 0,2 \times 0,933 \times 28}{9000} \times 100\% \\ &= 0,645 \% \end{aligned}$$

- Variabel menit ke- 60

$$\text{Volume KMnO}_4 \text{ rata-rata} = \frac{0,2+0,1+0,1}{3}$$

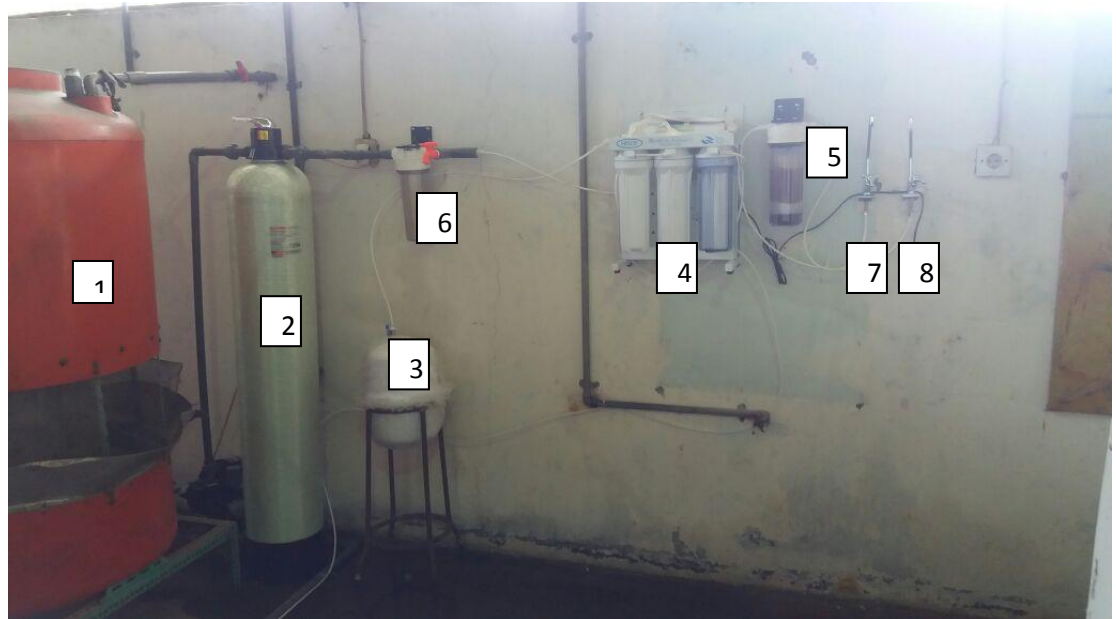
$$= 0,133 \text{ ml}$$

$$\% \text{ Fe}^{2+} = \frac{FP \times \text{Volume KMnO}_4 \times N \text{ KMnO}_4 \times BE_{\text{Fe}^{2+}} \times 100\%}{\text{berat sampel}}$$

$$= \frac{\frac{100}{9} \times 0,133 \times 0,933 \times 28}{9000} \times 100\%$$

$$= 0,429 \%$$

3. Foto



Gambar Skema Alat Sand Filter

Keterangan :

1. Bak penampung air sumur
2. Tabung and filter

3. Tampungang untuk air rumah tangga
4. Reverse Osmosis
5. Mixed bed
6. Kran untuk output air rumah tangga
7. Kran untuk air minum
8. Kran untuk aquadest