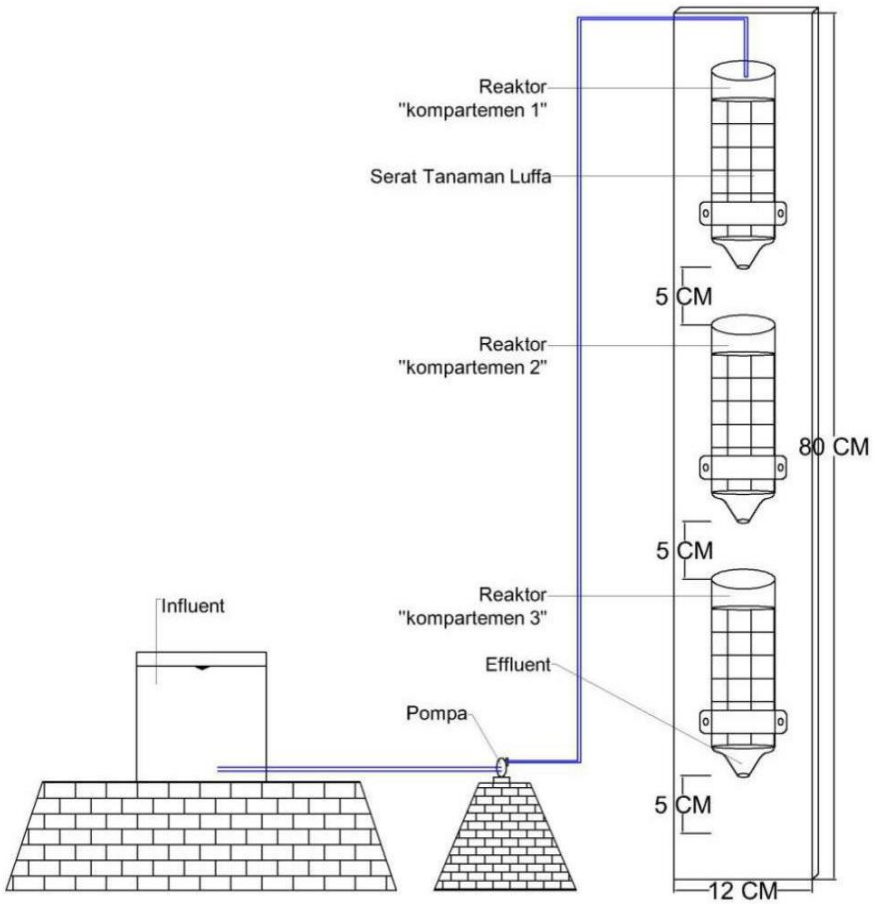
Lampiran 1.Desain Tray Bioreactor

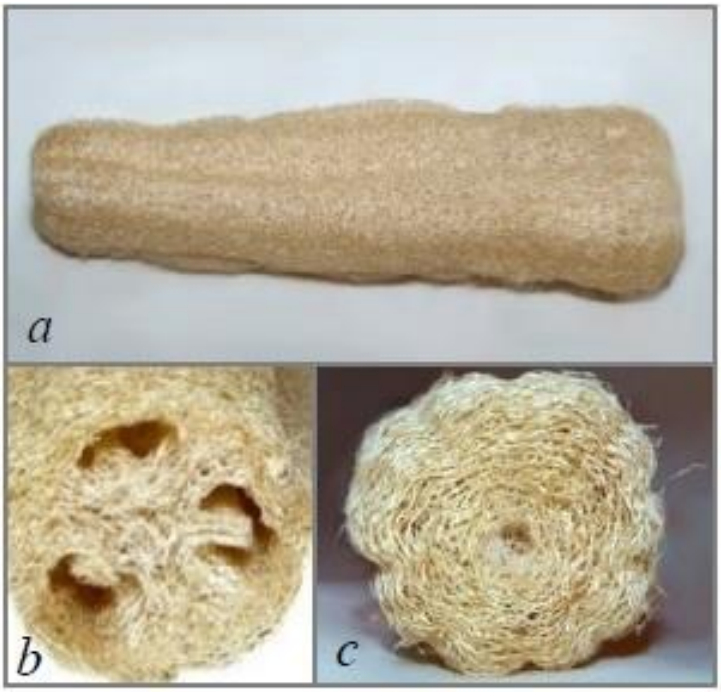


Keterangan Gambar :

Reaktor yang digunakan dalam penelitian ini direncanakan sebanyak 3 buah dengan jarak masing-masingnya 5 cm antar kompartemen. Cara kerja dari bioreaktor ini adalag dengan menampung air olahan IPAL Mendiro dengan ember kemudian di pompa agar dapat mengalir melalui kompartemen yang sudah terisi dengan media *Luffa Cyllindrica* yang sudah dilapisi dengan biofilm. Debit air yang dialirkan disesuaikan dengan HRT yang diinginkan yakni 4 jam. Selanjutnya air yang sudah melalui 3 kompartemen ditampung untuk kemudian dilakukan pengecekan COD dan TSS di Laboratorium Kualitas Lingkungan.

Lampiran 2.Pompa Akuarium dengan Merek Aquila P1800

Lampiran 3.Gambar Media *Luffa Cyllindrica*



Lampiran 4.Gambar Media *Bioball*

Lampiran 5. Parameter dan Lokasi Pengambilan Sampel

Parameter	Lokasi Sampling	Waktu
COD	Inlet dan Outlet	Tahap Aklimatisasi
COD	Inlet dan Outlet	Tahap *Running*
TSS	Inlet dan Outlet	Tahap *Running*
pH	Inlet dan Outlet	Tahap *Running*
DO	Inlet dan Outlet	Tahap *Running*
Temperatur	Inlet dan Outlet	Tahap *Running*
Kekeruhan	Inlet dan Outlet	Tahap *Running*
COD	Inlet dan Outlet setiap Kompartemen	Kondisi Tunak
TSS	Inlet dan Outlet setiap Kompartemen	Kondisi Tunak
pH	Inlet dan Outlet setiap Kompartemen	Kondisi Tunak
Temperatur	Inlet dan Outlet setiap Kompartemen	Kondisi Tunak
DO	Inlet dan Outlet setiap Kompartemen	Kondisi Tunak

Lampiran 6. Metode Pengujian Parameter

1. Metode Pengujian COD

Metode pengujian Chemical Oxygen Demand yang digunakan mengacu pada **SNI 06-6989.2-2004** tentang **Cara Uji Kebutuhan Oksigen Kimiawi Dengan Refluks Tertutup Secara Spektrofotometri.**

a) Perhitungan COD

a. Perhitungan Kurva Kalibrasi

$$a = \frac{(\Sigma yi - (b\Sigma xi)}{n} \quad \text{.....(3.5)}$$

$$b = \frac{\Sigma xiyi - \frac{\Sigma xiyi}{n}}{\Sigma xi^2 - (\Sigma xi)^2 / n} \quad \text{.....(3.6)}$$

Keterangan:

a : nilai a

b : nilai b

x : konsentrasi sampel (mg/l)

y : absorbansi sampel (A)

b. Perhitungan Nilai COD

y = bx + a ..... . (3.7)

Keterangan:

a : nilai a

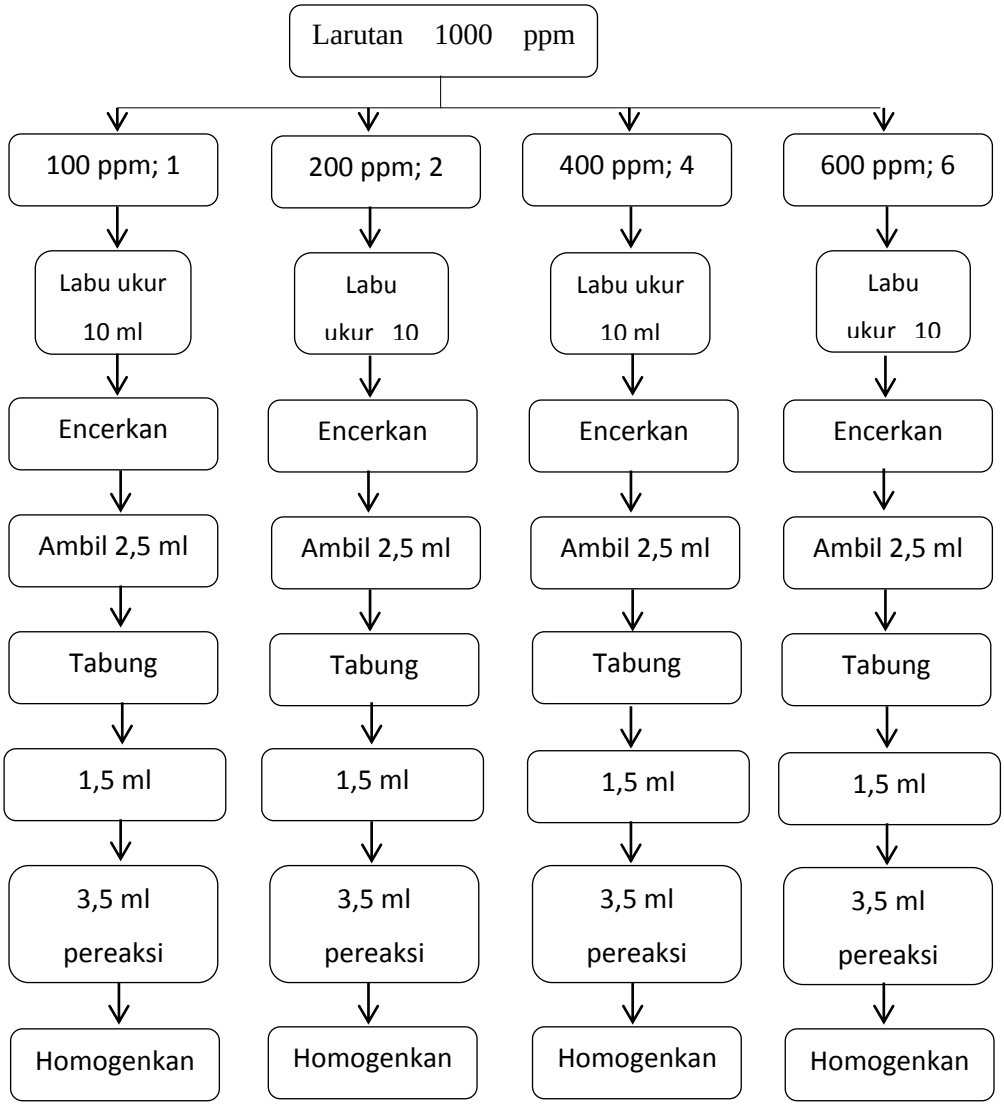
b : nilai b

x : konsentrasi sampel (mg/l)

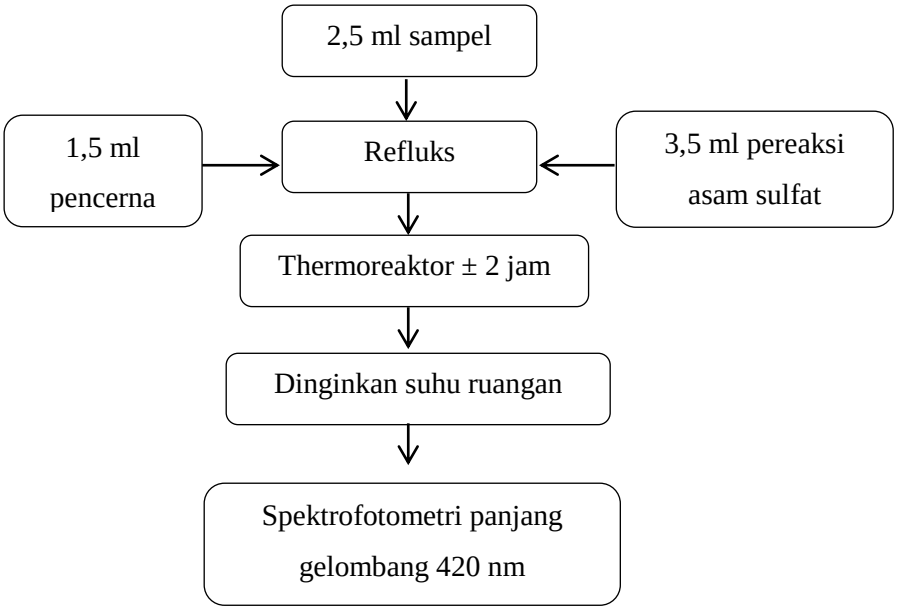
y : absorbansi sampel (A)

b) Pengujian COD

a. Pembuatan kurva kalibrasi



b. Pengujian sampel



2. Metode Pengujian TSS

Metode pengujian *Total Suspended Solid* yang digunakan mengacu pada **SNI 06-6989.3-2004** tentang **Cara uji padatan tersuspensi total (*Total Suspended Solid, TSS*) secara gravimetri**.

a) Perhitungan

Mg TSS per liter = $\frac{(A-B)x\ 1000}{Volume\ contoh\ uji,mL}$

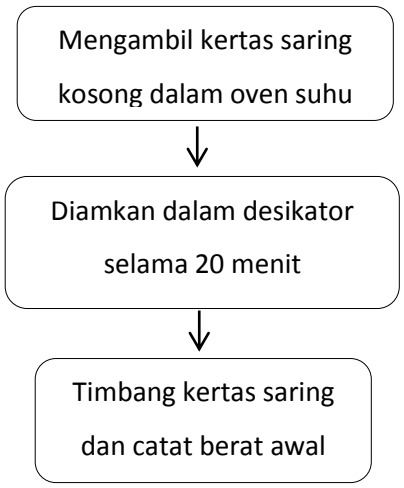
Keterangan :

A adalah berat kertas saring + residu kering, mg

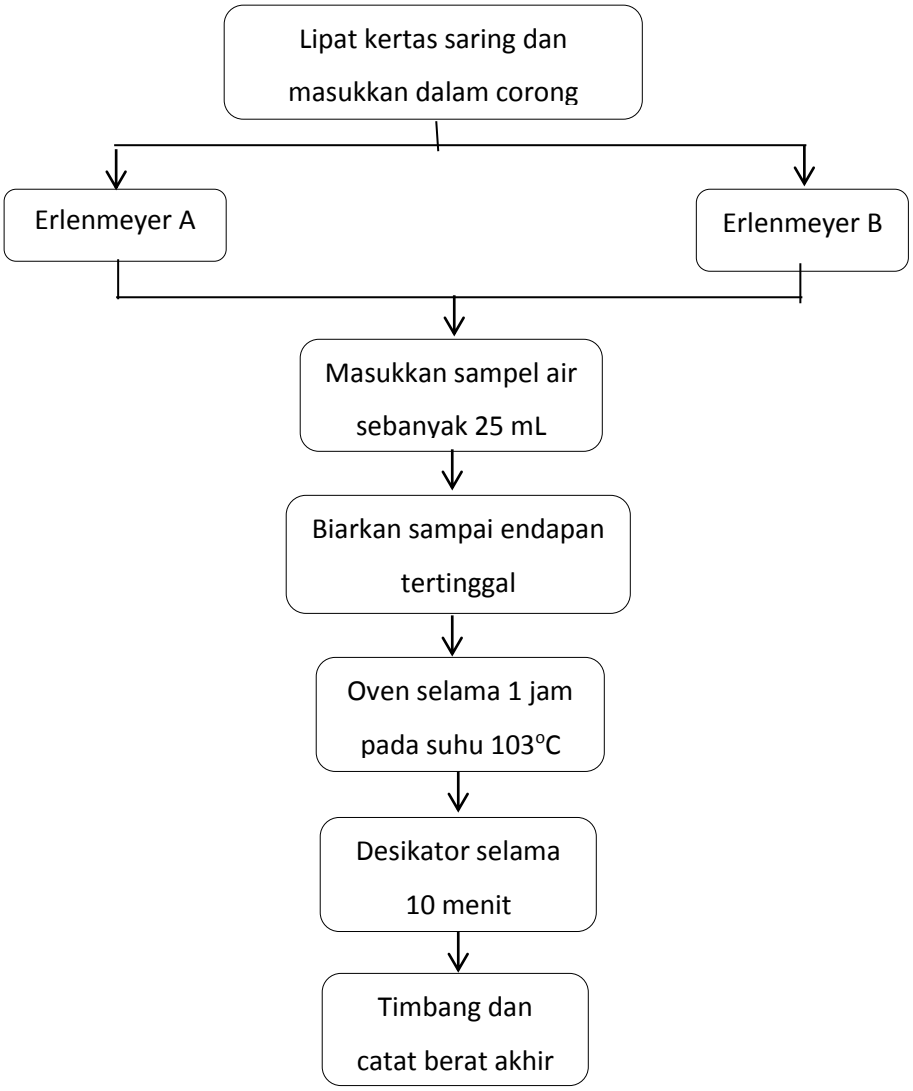
B adalah berat kertas saring, mg

b) Pengujian TSS

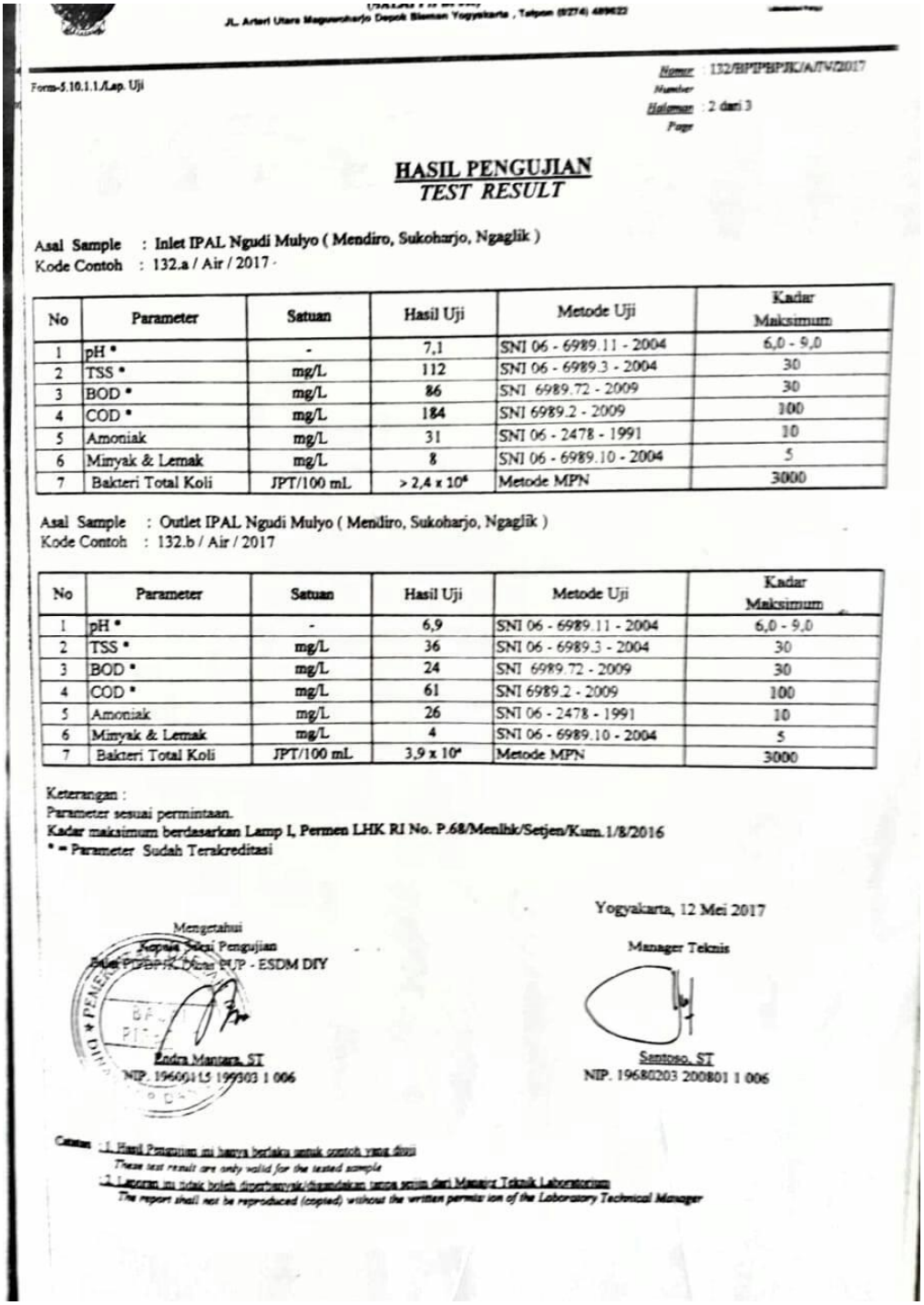
a. Penimbangan kertas sring kosong



b. Pengujian sampel uji



Lampiran 7. Hasil Pengujian IPAL Komunal Mendiro, Yogyakarta



JL. Arteri Utara Maguwoharjo Depok Sleman Yogyakarta , Telepon (0274) 489822

Form-5.10.1.1/Lap. Uji

Nomor / Number : 132/BPTPBPJK/A/IV/2017
Halaman / Page : 2 dari 3

HASIL PENGUJIAN
TEST RESULT

Asal Sample : Inlet IPAL Ngudi Mulyo (Mendiro, Sukoharjo, Ngaglik)
Kode Contoh : 132.a / Air / 2017

No	Parameter	Satuan	Hasil Uji	Metode Uji	Kadar Maksimum
1	pH *	-	7,1	SNI 06 - 6989.11 - 2004	6,0 - 9,0
2	TSS *	mg/L	112	SNI 06 - 6989.3 - 2004	30
3	BOD *	mg/L	86	SNI 6989.72 - 2009	30
4	COD *	mg/L	184	SNI 6989.2 - 2009	100
5	Amoniak	mg/L	31	SNI 06 - 2478 - 1991	10
6	Minyak & Lemak	mg/L	8	SNI 06 - 6989.10 - 2004	5
7	Bakteri Total Koli	JPT/100 mL	> 2,4 x 10^4	Metode MPN	3000

Asal Sample : Outlet IPAL Ngudi Mulyo (Mendiro, Sukoharjo, Ngaglik)
Kode Contoh : 132.b / Air / 2017

No	Parameter	Satuan	Hasil Uji	Metode Uji	Kadar Maksimum
1	pH *	-	6,9	SNI 06 - 6989.11 - 2004	6,0 - 9,0
2	TSS *	mg/L	36	SNI 06 - 6989.3 - 2004	30
3	BOD *	mg/L	24	SNI 6989.72 - 2009	30
4	COD *	mg/L	61	SNI 6989.2 - 2009	100
5	Amoniak	mg/L	26	SNI 06 - 2478 - 1991	10
6	Minyak & Lemak	mg/L	4	SNI 06 - 6989.10 - 2004	5
7	Bakteri Total Koli	JPT/100 mL	3,9 x 10^4	Metode MPN	3000

Keterangan :
Parameter sesuai permintaan.
Kadar maksimum berdasarkan Lamp I, Permen LHK RI No. P.68/Menlhk/Setjen/Kum.1/8/2016
* = Parameter Sudah Terakreditasi

Yogyakarta, 12 Mei 2017

Mengetahui
Kepala Seksi Pengujian
[illegible] PUP - ESDM DIY

Endra Mantara, ST
NIP. 19660115 199303 1 006

Manager Teknis

Santoso, ST
NIP. 19680203 200801 1 006

Catatan : 1. Hasil Pengujian ini hanya berlaku untuk contoh yang diuji
These test result are only valid for the tested sample
2. Laporan ini tidak boleh diperbanyak/digandakan tanpa ijin dari Manager Teknik Laboratorium
This report shall not be reproduced (copied) without the written permission of the Laboratory Technical Manager

LABORATORIUM TEKNIK LINGKUNGAN
INSTITUT TEKNOLOGI YOGYAKARTA (STTL "YLH")
Alamat : Winong, Tinalan, Kotagede. Telp (0274) 371270
Website : www. sttl-ylh.ac.id Email : info@sttl-ylh.ac-id

Hasil Pengujian Contoh

Dikirim oleh : Agus
Jenis Contoh : Limbah domestik
Asal : IPAL Komunal Mendiro Sukoharjo Ngaglik Sleman
Titik Kordinat : 7° 42' 36" LS 110 ° 24' 59 " BT
Tanggal Pengambilan : 28 Februari 2017
Tanggal Penerimaan : 28 Februari 2017
Kode Laboratorium : 001/ HA/ L/ ITY/ Lab/ III/ 2017

No.	Parameter	Satuan	Hasil Pengujian	
			In let	Out let
1.	pH	-	6,8	6,8
2.	Suhu	°C	26	26
3.	TSS	mg/ L	281	35
4.	TDS	mg/ L	230	197
5.	C O D	mg/ L	229.617	94,992
6.	B O D_5	mg/ L	137,310	53,385
7.	Minyak Lemak	mg/ L	494	19
8.	Deterjen	mg/ L	7,9080	5,0945
9.	Coliform	MPN/100 ml	-	1100.10^6

Catt. : Hasil pengujian ini hanya berlaku untuk contoh yang diuji

Yogyakarta, 9 Maret 2017
Ka. Lab

LABORATORIUM
INSTITUT TEKNOLOGI YOGYAKARTA
(STTL "YLH" YOGYAKARTA)

(Retno Susetyaningsih, ST.MP)

LABORATORIUM TEKNIK LINGKUNGAN
INSTITUT TEKNOLOGI YOGYAKARTA (STTL "YLH")
Alamat : Wmong, Tmalan, Kotagede. Telp (0274) 371270
Website : www, sttl-ylh.ac.id Email : info@sttl-ylh.ac.id

Hasil Pengujian Contoh

Dikirim oleh : Timbul
Jenis Contoh : Limbah domestik
Asal : IPAL Komunal Mendiro Sukoharjo Ngaglik Sleman
Titik Kordinat : 7° 42' 36" LS 110 ° 24' 59 " BT
Tanggal Pengambilan : 13 Juni 2017
Tanggal Penerimaan : 13 Juni 2017
Kode Laboratorium : 004/ HA/ L/ ITY/ Lab/ VII/ 2017

No.	Parameter	Satuan	Hasil Pengujian	
			In let gravel	Out let gravel
1.	pH	-	6,9	6,8
2.	Suhu	°C	27	27
3.	TSS	mg/ L	232	118
4.	C O D	mg/ L	151,534	129,994
5.	B O D_5	mg/ L	88,950	63,047
6.	Minyak Lemak	mg/ L	54	4
7.	Deterjen	mg/ L	0,1865	0,1531

Catt. : Hasil pengujian ini hanya berlaku untuk contoh yang diuji

Yogyakarta, 12 Juli 2017
Ka. Lab

LABORATORIUM
INSTITUT TEKNOLOGI YOGYAKARTA
(STTL "YLH" YOGYAKARTA)

(Retno Subekti Sanangsih, ST.MP)

Lampiran 8. Hasil Pengujian COD dengan Menggunakan Media Penyangga *Luffa Cyllindrica*

Hari Ke-	Hari/Tanggal	Reaktor	Sampel		Abs	Kadar COD	r COD	RDP	% Removal
4	26-Apr	Luffa 1	Influent	S1	0.011	235.4	245.4	8%	0%
				S2	0.012	255.4			
			Effluent	S1	0.011	235.4	245.4	8%	
				S2	0.012	255.4			
		Luffa 2	Influent	S1	0.011	235.4	245.4	8%	-77%
				S2	0.012	255.4			
			Effluent	S1	0.02	415.4	435.4	9%	
				S2	0.022	455.4			
5	27-Apr	Luffa 1	Influent	S1	0.014	295.4	305.4	7%	-52%
				S2	0.015	315.4			
			Effluent	S1	0.022	455.4	465.4	4%	
				S2	0.023	475.4			
		Luffa 2	Influent	S1	0.014	295.4	305.4	7%	-108%
				S2	0.015	315.4			
			Effluent	S1	0.03	615.4	635.4	6%	
				S2	0.032	655.4			
8	30-Apr	Luffa 1	Influent	S1	0.015	315.4	325.4	6%	9%
				S2	0.016	335.4			
			Effluent	S1	0.012	255.4	295.4	27%	
				S2	0.016	335.4			
		Luffa 2	Influent	S1	0.015	315.4	325.4	6%	25%
				S2	0.016	335.4			
			Effluent	S1	0.011	235.4	245.4	8%	
				S2	0.012	255.4			
9	1-May	Luffa 1	Influent	S1	0.017	355.4	365.4	5%	11%
				S2	0.018	375.4			
			Effluent	S1	0.015	315.4	325.4	6%	
				S2	0.016	335.4			
		Luffa 2	Influent	S1	0.017	355.4	365.4	5%	-11%
				S2	0.018	375.4			

			Effluent	S1	0.019	395.4	405.4	5%	
				S2	0.02	415.4			
11	3-May	Luffa 1	Influent	S1	0.03	615.4	635.4	6%	17%
				S2	0.032	655.4			
			Effluent	S1	0.025	515.4	525.4	4%	
				S2	0.026	535.4			
		Luffa 2	Influent	S1	0.03	615.4	635.4	6%	30%
				S2	0.032	655.4			
			Effluent	S1	0.021	435.4	445.4	4%	
				S2	0.022	455.4			
12	4-May	Luffa 1	Influent	S1	0.082	94.5	928.3	0%	-16%
				S2	0.084	91.2			
			Effluent	S1	0.074	107.8	1078.3	0%	
				S2	0.074	107.8			
		Luffa 2	Influent	S1	0.082	94.5	928.3	0%	-81%
				S2	0.084	91.2			
			Effluent	S1	0.036	171.2	1678.3	0%	
				S2	0.04	164.5			
13	5-May	Luffa 1	Influent	S1	0.112	64.5	632.9	0%	-19%
				S2	0.118	62.0			
			Effluent	S1	0.083	76.6	751.7	0%	
				S2	0.09	73.7			
		Luffa 2	Influent	S1	0.112	64.5	632.9	0%	-22%
				S2	0.118	62.0			
			Effluent	S1	0.081	77.5	770.4	0%	
				S2	0.083	76.6			
14	6-May	Luffa 1	Influent	S1	0.145	50.8	503.8	0%	-17%
				S2	0.147	50.0			
			Effluent	S1	0.125	59.1	587.1	0%	
				S2	0.127	58.3			
		Luffa 2	Influent	S1	0.145	50.8	503.8	0%	-10%
				S2	0.147	50.0			
			Effluent	S1	0.133	55.8	555.8	0%	
				S2	0.134	55.4			
15	7-May	Luffa 1	Influent	S1	0.16	44.5	443.3	0%	5%
				S2	0.161	44.1			

			Effluent	S1	0.163	43.3	420.4	1%	
				S2	0.169	40.8			
		Luffa 2	Influent	S1	0.16	44.5	443.3	0%	7%
				S2	0.161	44.1			
			Effluent	S1	0.167	41.6	412.1	0%	
				S2	0.169	40.8			
16	8-May	Luffa 1	Influent	S1	0.168	41.2	410.0	0%	-18%
				S2	0.169	40.8			
			Effluent	S1	0.15	48.7	482.9	0%	
				S2	0.152	47.9			
		Luffa 2	Influent	S1	0.168	41.2	410.0	0%	-26%
				S2	0.169	40.8			
			Effluent	S1	0.143	51.6	518.3	0%	
				S2	0.142	52.0			
17	9-May	Luffa 1	Influent	S1	0.165	42.5	422.5	0%	-2%
				S2	0.166	42.0			
			Effluent	S1	0.163	43.3	432.9	0%	
				S2	0.163	43.3			
		Luffa 2	Influent	S1	0.165	42.5	422.5	0%	-1%
				S2	0.166	42.0			
			Effluent	S1	0.164	42.9	426.7	0%	
				S2	0.165	42.5			
18	10-May	Luffa 1	Influent	S1	0.159	45.0	445.4	0%	16%
				S2	0.161	44.1			
			Effluent	S1	0.176	37.9	374.6	0%	
				S2	0.178	37.0			
		Luffa 2	Influent	S1	0.159	45.0	445.4	0%	10%
				S2	0.161	44.1			
			Effluent	S1	0.17	40.4	401.7	0%	
				S2	0.171	40.0			
19	11-May	Luffa 1	Influent	S1	0.146	50.4	499.6	0%	27%
				S2	0.148	49.5			
			Effluent	S1	0.177	37.5	366.3	0%	
				S2	0.181	35.8			
		Luffa 2	Influent	S1	0.146	50.4	499.6	0%	23%
				S2	0.148	49.5			

			Effluent	S1	0.172	39.5	385.0	1%	
				S2	0.177	37.5			
20	12-May	Luffa 1	Influent	S1	0.139	53.3	532.9	0%	24%
				S2	0.139	53.3			
			Effluent	S1	0.168	41.2	405.8	0%	
				S2	0.171	40.0			
		Luffa 2	Influent	S1	0.139	53.3	532.9	0%	20%
				S2	0.139	53.3			
			Effluent	S1	0.165	42.5	424.6	0%	
				S2	0.165	42.5			
21	13-May	Luffa 1	Influent	S1	0.156	46.2	462.1	0%	12%
				S2	0.156	46.2			
			Effluent	S1	0.168	41.2	405.8	0%	
				S2	0.171	40.0			
		Luffa 2	Influent	S1	0.156	46.2	462.1	0%	-3%
				S2	0.156	46.2			
			Effluent	S1	0.152	47.9	474.6	0%	
				S2	0.154	47.0			
22	14-May	Luffa 1	Influent	S1	0.193	30.8	301.7	0%	-27%
				S2	0.196	29.5			
			Effluent	S1	0.172	39.5	382.9	1%	
				S2	0.178	37.0			
		Luffa 2	Influent	S1	0.193	30.8	301.7	0%	-71%
				S2	0.196	29.5			
			Effluent	S1	0.143	51.6	516.3	0%	
				S2	0.143	51.6			
23	15-May	Luffa 1	Influent	S1	0.215	21.6	210.0	1%	-101%
				S2	0.218	20.4			
			Effluent	S1	0.164	42.9	422.5	0%	
				S2	0.167	41.6			
		Luffa 2	Influent	S1	0.215	21.6	210.0	1%	-123%
				S2	0.218	20.4			
			Effluent	S1	0.152	47.9	468.3	0%	
				S2	0.157	45.8			
24	16-May	Luffa 1	Influent	S1	0.144	51.2	510.0	0%	-10%
				S2	0.145	50.8			

			Effluent	S1	0.131	56.6	562.1	0%	
				S2	0.133	55.8			
		Luffa 2	Influent	S1	0.144	51.2	510.0	0%	-20%
				S2	0.145	50.8			
			Effluent	S1	0.12	61.2	610.0	0%	
				S2	0.121	60.8			
25	17-May	Luffa 1	Influent	S1	0.172	39.5	385.0	1%	5%
				S2	0.177	37.5			
			Effluent	S1	0.177	37.5	366.3	0%	
				S2	0.181	35.8			
		Luffa 2	Influent	S1	0.172	39.5	385.0	1%	-13%
				S2	0.177	37.5			
			Effluent	S1	0.161	44.1	435.0	0%	
				S2	0.164	42.9			
26	18-May	Luffa 1	Influent	S1	0.142	52.0	485.0	1%	34%
				S2	0.159	45.0			
			Effluent	S1	0.188	32.9	320.4	1%	
				S2	0.192	31.2			
		Luffa 2	Influent	S1	0.142	52.0	485.0	1%	2%
				S2	0.159	45.0			
			Effluent	S1	0.15	48.7	476.7	0%	
				S2	0.155	46.6			

Lampiran 9. Hasil Pengujian COD dengan Menggunakan Media Penyangga *Bioball* pada Tahap Aklimatisasi

Hari Ke-	Hari/Tanggal	Reaktor	Sampel		Abs	Kadar COD	r COD	RDP	% Removal
1	22-May	Bioball 1	Influent	S1	0.195	29.96	291.25	1%	-46%
				S2	0.199	28.29			
			Effluent	S1	0.162	43.71	426.67	0%	
				S2	0.167	41.63			
		Bioball 2	Influent	S1	0.195	29.96	291.25	1%	-9%
				S2	0.199	28.29			
			Effluent	S1	0.19	32.04	318.33	0%	
				S2	0.191	31.63			
2	23-May	Bioball 1	Influent	S1	0.164	42.88	424.58	0%	15%
				S2	0.166	42.04			
			Effluent	S1	0.177	37.46	360.00	1%	
				S2	0.184	34.54			
		Bioball 2	Influent	S1	0.164	42.88	424.58	0%	-20%
				S2	0.166	42.04			
			Effluent	S1	0.144	51.21	510.00	0%	
				S2	0.145	50.79			
3	24-May	Bioball 1	Influent	S1	0.178	37.04	368.33	0%	18%
				S2	0.179	36.63			
			Effluent	S1	0.192	31.21	301.67	1%	
				S2	0.197	29.13			
		Bioball 2	Influent	S1	0.178	37.04	368.33	0%	-5%
				S2	0.179	36.63			
			Effluent	S1	0.174	38.71	387.08	0%	
				S2	0.174	38.71			
4	25-May	Bioball 1	Influent	S1	0.175	38.29	382.92	0%	-2%
				S2	0.175	38.29			
			Effluent	S1	0.173	39.13	389.17	0%	

				S2	0.174	38.71			
		Bioball 2	Influent	S1	0.175	38.29	382.92	0%	-7%
				S2	0.175	38.29			
			Effluent	S1	0.168	41.21	407.92	0%	
				S2	0.17	40.38			
5	26-May	Bioball 1	Influent	S1	0.132	56.21	551.67	0%	-4%
				S2	0.137	54.13			
			Effluent	S1	0.122	60.38	574.58	1%	
				S2	0.136	54.54			
		Bioball 2	Influent	S1	0.132	56.21	551.67	0%	19%
				S2	0.137	54.13			
			Effluent	S1	0.158	45.38	447.50	0%	
				S2	0.161	44.13			
7	28-May	Bioball 1	Influent	S1	0.167	41.63	405.83	1%	-6%
				S2	0.172	39.54			
			Effluent	S1	0.164	42.88	428.75	0%	
				S2	0.164	42.88			
		Bioball 2	Influent	S1	0.167	41.63	405.83	1%	-14%
				S2	0.172	39.54			
			Effluent	S1	0.155	46.63	464.17	0%	
				S2	0.156	46.21			
8	29-May	Bioball 1	Influent	S1	0.132	56.21	557.92	0%	16%
				S2	0.134	55.38			
			Effluent	S1	0.152	47.88	470.42	0%	
				S2	0.156	46.21			
		Bioball 2	Influent	S1	0.132	56.21	557.92	0%	3%
				S2	0.134	55.38			
			Effluent	S1	0.133	55.79	541.25	1%	
				S2	0.141	52.46			
9	30-May	Bioball 1	Influent	S1	0.061	85.79	855.83	0%	6%
				S2	0.062	85.38			

			Effluent	S1	0.071	81.63	803.75	0%	
				S2	0.077	79.13			
		Bioball 2	Influent	S1	0.061	85.79	855.83	0%	7%
				S2	0.062	85.38			
			Effluent	S1	0.076	79.54	793.33	0%	
				S2	0.077	79.13			
10	31-May	Bioball 1	Influent	S1	0.156	46.21	447.50	1%	15%
				S2	0.163	43.29			
			Effluent	S1	0.173	39.13	378.75	1%	
				S2	0.179	36.63			
		Bioball 2	Influent	S1	0.156	46.21	447.50	1%	28%
				S2	0.163	43.29			
			Effluent	S1	0.189	32.46	322.50	0%	
				S2	0.19	32.04			
11	1-Jun	Bioball 1	Influent	S1	0.196	29.54	287.08	1%	-23%
				S2	0.2	27.88			
			Effluent	S1	0.182	35.38	353.75	0%	
				S2	0.182	35.38			
		Bioball 2	Influent	S1	0.196	29.54	287.08	1%	-11%
				S2	0.2	27.88			
			Effluent	S1	0.19	32.04	318.33	0%	
				S2	0.191	31.63			
12	2-Jun	Bioball 1	Influent	S1	0.152	47.88	476.67	0%	13%
				S2	0.153	47.46			
			Effluent	S1	0.165	42.46	414.17	1%	
				S2	0.17	40.38			
		Bioball 2	Influent	S1	0.152	47.88	476.67	0%	10%
				S2	0.153	47.46			
			Effluent	S1	0.162	43.71	430.83	0%	
				S2	0.165	42.46			
13	3-Jun	Bioball 1	Influent	S1	0.172	39.54	393.33	0%	-2%

				S2	0.173	39.13			
			Effluent	S1	0.169	40.79	399.58	0%	
				S2	0.173	39.13			
		Bioball 2	Influent	S1	0.172	39.54	393.33	0%	-2%
				S2	0.173	39.13			
			Effluent	S1	0.17	40.38	399.58	0%	
				S2	0.172	39.54			
14	4-Jun	Bioball 1	Influent	S1	0.171	39.96	389.17	1%	16%
				S2	0.176	37.88			
			Effluent	S1	0.188	32.88	326.67	0%	
				S2	0.189	32.46			
		Bioball 2	Influent	S1	0.171	39.96	389.17	1%	2%
				S2	0.176	37.88			
			Effluent	S1	0.175	38.29	380.83	0%	
				S2	0.176	37.88			
15	5-Jun	Bioball 1	Influent	S1	0.094	72.04	718.33	0%	7%
				S2	0.095	71.63			
			Effluent	S1	0.106	67.04	668.33	0%	
				S2	0.107	66.63			
		Bioball 2	Influent	S1	0.094	72.04	718.33	0%	1%
				S2	0.095	71.63			
			Effluent	S1	0.096	71.21	707.92	0%	
				S2	0.098	70.38			
38	28-Jun	Bioball 1	Influent	S1	0.088	74.54	745.42	0%	-4%
				S2	0.088	74.54			
			Effluent	S1	0.08	77.88	778.75	0%	
				S2	0.08	77.88			
		Bioball 2	Influent	S1	0.088	74.54	745.42	0%	-8%
				S2	0.088	74.54			
			Effluent	S1	0.072	81.21	807.92	0%	
				S2	0.074	80.38			

39	29-Jun	Bioball 1	Influent	S1	0.085	75.79	749.58	0%	1%
				S2	0.089	74.13			
			Effluent	S1	0.087	74.96	743.33	0%	
				S2	0.09	73.71			
		Bioball 2	Influent	S1	0.085	75.79	749.58	0%	36%
				S2	0.089	74.13			
			Effluent	S1	0.15	48.71	476.67	0%	
				S2	0.155	46.63			
40	30-Jun	Bioball 1	Influent	S1	0.138	53.71	535.00	0%	28%
				S2	0.139	53.29			
			Effluent	S1	0.174	38.71	382.92	0%	
				S2	0.176	37.88			
		Bioball 2	Influent	S1	0.138	53.71	535.00	0%	18%
				S2	0.139	53.29			
			Effluent	S1	0.16	44.54	437.08	0%	
				S2	0.164	42.88			
41	1-Jul	Bioball 1	Influent	S1	0.162	43.71	432.92	0%	19%
				S2	0.164	42.88			
			Effluent	S1	0.182	35.38	351.67	0%	
				S2	0.183	34.96			
		Bioball 2	Influent	S1	0.162	43.71	432.92	0%	6%
				S2	0.164	42.88			
			Effluent	S1	0.169	40.79	405.83	0%	
				S2	0.17	40.38			
42	2-Jul	Bioball 1	Influent	S1	0.16	44.54	441.25	0%	8%
				S2	0.162	43.71			
			Effluent	S1	0.168	41.21	407.92	0%	
				S2	0.17	40.38			
		Bioball 2	Influent	S1	0.16	44.54	441.25	0%	9%
				S2	0.162	43.71			
			Effluent	S1	0.17	40.38	399.58	0%	

				S2	0.172	39.54			
43	3-Jul	Bioball 1	Influent	S1	0.165	42.46	422.50	0%	22%
				S2	0.166	42.04			
			Effluent	S1	0.188	32.88	328.75	0%	
				S2	0.188	32.88			
		Bioball 2	Influent	S1	0.165	42.46	422.50	0%	22%
				S2	0.166	42.04			
			Effluent	S1	0.187	33.29	330.83	0%	
				S2	0.188	32.88			
44	4-Jul	Bioball 1	Influent	S1	0.182	35.38	353.75	0%	6%
				S2	0.182	35.38			
			Effluent	S1	0.186	33.71	332.92	0%	
				S2	0.188	32.88			
		Bioball 2	Influent	S1	0.182	35.38	353.75	0%	6%
				S2	0.182	35.38			
			Effluent	S1	0.186	33.71	332.92	0%	
				S2	0.188	32.88			
45	5-Jul	Bioball 1	Influent	S1	0.179	36.63	364.17	0%	9%
				S2	0.18	36.21			
			Effluent	S1	0.186	33.71	330.83	0%	
				S2	0.189	32.46			
		Bioball 2	Influent	S1	0.179	36.63	364.17	0%	3%
				S2	0.18	36.21			
			Effluent	S1	0.183	34.96	351.67	0%	
				S2	0.182	35.38			
46	6-Jul	Bioball 1	Influent	S1	0.132	56.21	562.08	0%	5%
				S2	0.132	56.21			
			Effluent	S1	0.139	53.29	532.92	0%	
				S2	0.139	53.29			
		Bioball 2	Influent	S1	0.132	56.21	562.08	0%	6%
				S2	0.132	56.21			

			Effluent	S1	0.14	52.88	528.75	0%	
				S2	0.14	52.88			
47	7-Jul	Bioball 1	Influent	S1	0.135	54.96	545.42	0%	7%
				S2	0.137	54.13			
			Effluent	S1	0.145	50.79	505.83	0%	
				S2	0.146	50.38			
		Bioball 2	Influent	S1	0.135	54.96	545.42	0%	9%
				S2	0.137	54.13			
			Effluent	S1	0.146	50.38	497.50	0%	
				S2	0.149	49.13			
48	8-Jul	Bioball 1	Influent	S1	0.142	52.04	510.00	0%	11%
				S2	0.147	49.96			
			Effluent	S1	0.157	45.79	455.83	0%	
				S2	0.158	45.38			
		Bioball 2	Influent	S1	0.142	52.04	510.00	0%	11%
				S2	0.147	49.96			
			Effluent	S1	0.157	45.79	455.83	0%	
				S2	0.158	45.38			
49	9-Jul	Bioball 1	Influent	S1	0.138	53.71	535.00	0%	8%
				S2	0.139	53.29			
			Effluent	S1	0.149	49.13	491.25	0%	
				S2	0.149	49.13			
		Bioball 2	Influent	S1	0.138	53.71	535.00	0%	6%
				S2	0.139	53.29			
			Effluent	S1	0.146	50.38	501.67	0%	
				S2	0.147	49.96			
50	10-Jul	Bioball 1	Influent	S1	0.139	53.29	528.75	0%	9%
				S2	0.141	52.46			
			Effluent	S1	0.149	49.13	482.92	0%	
				S2	0.153	47.46			
		Bioball 2	Influent	S1	0.139	53.29	528.75	0%	5%

				S2	0.141	52.46			
			Effluent	S1	0.144	51.21	503.75	0%	
				S2	0.148	49.54			
51	11-Jul	Bioball 1	Influent	S1	0.093	72.46	720.42	0%	6%
				S2	0.095	71.63			
			Effluent	S1	0.103	68.29	676.67	0%	
				S2	0.106	67.04			
		Bioball 2	Influent	S1	0.093	72.46	720.42	0%	2%
				S2	0.095	71.63			
			Effluent	S1	0.097	70.79	705.83	0%	
				S2	0.098	70.38			
52	12-Jul	Bioball 1	Influent	S1	0.113	64.13	637.08	0%	6%
				S2	0.115	63.29			
			Effluent	S1	0.121	60.79	601.67	0%	
				S2	0.124	59.54			
		Bioball 2	Influent	S1	0.113	64.13	637.08	0%	8%
				S2	0.115	63.29			
			Effluent	S1	0.123	59.96	589.17	0%	
				S2	0.128	57.88			
53	13-Jul	Bioball 1	Influent	S1	0.104	67.88	674.58	0%	11%
				S2	0.106	67.04			
			Effluent	S1	0.122	60.38	597.50	0%	
				S2	0.125	59.13			
		Bioball 2	Influent	S1	0.104	67.88	674.58	0%	17%
				S2	0.106	67.04			
			Effluent	S1	0.132	56.21	557.92	0%	
				S2	0.134	55.38			
54	14-Jul	Bioball 1	Influent	S1	0.085	75.79	755.83	0%	13%
				S2	0.086	75.38			
			Effluent	S1	0.11	65.38	660.00	0%	
				S2	0.107	66.63			

		Bioball 2	Influent	S1	0.085	75.79	755.83	0%	15%
				S2	0.086	75.38			
			Effluent	S1	0.112	64.54	643.33	0%	
				S2	0.113	64.13			
55	15-Jul	Bioball 1	Influent	S1	0.1	69.54	693.33	0%	11%
				S2	0.101	69.13			
			Effluent	S1	0.118	62.04	616.25	0%	
				S2	0.12	61.21			
		Bioball 2	Influent	S1	0.1	69.54	693.33	0%	14%
				S2	0.101	69.13			
			Effluent	S1	0.123	59.96	595.42	0%	
				S2	0.125	59.13			

Lampiran 10. Hasil Pengujian COD dengan Menggunakan Media Penyangga *Bioball* pada Tahap *Running*

Hari Ke-	Tanggal	Data		Absorbansi		X	Kadar COD	RPD (%)	% Removal
1	16 Juli 2018	Influen	Sampel 1	0.111	A	563.6	568	2%	10
			Sampel 2	0.109	A	572.7			
		Bioball 1	Sampel 1	0.125	A	500.0	511	4%	
			Sampel 2	0.12	A	522.7			6
		Bioball 2	Sampel 1	0.118	A	531.8	534	1%	
			Sampel 2	0.117	A	536.4			
2	17 Juli 2018	Influen	Sampel 1	0.090	A	659.1	664	2%	6
			Sampel 2	0.088	A	668.2			
		Bioball 1	Sampel 1	0.099	A	618.2	623	2%	
			Sampel 2	0.097	A	627.3			7
		Bioball 2	Sampel 1	0.101	A	609.1	618	4%	
			Sampel 2	0.097	A	627.3			
3	18 Juli 2018	Influen	Sampel 1	0.076	A	722.7	727	3%	10
			Sampel 2	0.074	A	731.8			
		Bioball 1	Sampel 1	0.099	A	618.2	652	16%	
			Sampel 2	0.084	A	686.4			17
		Bioball 2	Sampel 1	0.103	A	600.0	602	1%	
			Sampel 2	0.102	A	604.5			
4	19 Juli 2018	Influen	Sampel 1	0.094	A	640.9	643	1%	11
			Sampel 2	0.093	A	645.5			
		Bioball 1	Sampel 1	0.11	A	568.2	573	2%	
			Sampel 2	0.108	A	577.3			10
		Bioball 2	Sampel 1	0.108	A	577.3	580	1%	
			Sampel 2	0.107	A	581.8			
5	20 Juli 2018	Influen	Sampel 1	0.092	A	650.0	652	1%	12
			Sampel 2	0.091	A	654.5			
		Bioball 1	Sampel 1	0.109	A	572.7	575	1%	

			Sampel 2	0.108	A	577.3			
		Bioball 2	Sampel 1	0.108	A	577.3	580	1%	11
			Sampel 2	0.107	A	581.8			
6	21 Juli 2018	Influen	Sampel 1	0.076	A	722.7	727	3%	13
			Sampel 2	0.074	A	731.8			
		Bioball 1	Sampel 1	0.097	A	627.3	632	2%	
			Sampel 2	0.095	A	636.4			20
		Bioball 2	Sampel 1	0.107	A	581.8	584	1%	
			Sampel 2	0.106	A	586.4			
8	23 Juli 2018	Influen	Sampel 1	0.071	A	745.5	752	4%	12
			Sampel 2	0.068	A	759.1			
		Bioball 1	Sampel 1	0.09	A	659.1	661	1%	
			Sampel 2	0.089	A	663.6			13
		Bioball 2	Sampel 1	0.092	A	650.0	655	2%	
			Sampel 2	0.090	A	659.1			
9	24 Juli 2018	Influen	Sampel 1	0.048	A	850.0	852	2%	17
			Sampel 2	0.047	A	854.5			
		Bioball 1	Sampel 1	0.082	A	695.5	705	5%	
			Sampel 2	0.078	A	713.6			15
		Bioball 2	Sampel 1	0.077	A	718.2	723	3%	
			Sampel 2	0.075	A	727.3			
10	25 Juli 2018	Influen	Sampel 1	0.044	A	868.2	882	15%	13
			Sampel 2	0.038	A	895.5			
		Bioball 1	Sampel 1	0.068	A	759.1	766	5%	
			Sampel 2	0.065	A	772.7			11
		Bioball 2	Sampel 1	0.063	A	781.8	784	2%	
			Sampel 2	0.062	A	786.4			
12	27 Juli 2018	Influen	Sampel 1	0.040	A	886.4	893	8%	9
			Sampel 2	0.037	A	900.0			
		Bioball 1	Sampel 1	0.058	A	804.5	811	5%	
			Sampel 2	0.055	A	818.2			10

		Bioball 2	Sampel 1	0.059	A	800.0	802	2%	
			Sampel 2	0.058	A	804.5			
13	28 Juli 2018	Influen	Sampel 1	0.079	A	709.1	711	1%	8
			Sampel 2	0.078	A	713.6			
		Bioball 1	Sampel 1	0.092	A	650.0	657	3%	
			Sampel 2	0.089	A	663.6			14
		Bioball 2	Sampel 1	0.103	A	600.0	611	5%	
			Sampel 2	0.098	A	622.7			
14	30 Juli 2018	Influen	Sampel 1	0.097	A	627.3	639	5%	
			Sampel 2	0.092	A	650.0			
		Bioball 1	komp.1.1	0.11	A	568.2	575	3%	10
			komp. 1.2	0.107	A	581.8			
			komp. 2.1	0.113	A	554.5	561	3%	12
			komp. 2.2	0.110	A	568.2			
			komp. 3.1	0.111	A	563.6	568	2%	11
			komp. 3.2	0.109	A	572.7			

Lampiran 11. Hasil Pengujian TSS dengan Menggunakan Media Penyangga *Bioball* pada Tahap *Running*

Tanggal	Hari Ke-	Sampel	Berat Kosong	Berat Kosong + Isi	Selisih	Mg Contoh Uji	TSS	Tss Rerata	% Removal	RPD
16 Juli 2018	1	Influen 1	1071.7	1079.1	7.4	30	247	243		2.7%
		Influen 2	1081.3	1088.5	7.2	30	240			
		Eff 1.1	1073.2	1079.1	5.9	30	197	192	21%	5.2%
		Eff 1.2	1075.5	1081.1	5.6	30	187			
		Eff 2.1	1077.3	1082.1	4.8	30	160	168	31%	9.9%
		Eff 2.2	1075.9	1081.2	5.3	30	177			
17 Juli 2018	2	Influen 1	1089.5	1095.9	6.4	30	213	223		9.0%
		Influen 2	1067.9	1074.9	7	30	233			
		Eff 1.1	1077.2	1082.4	5.2	30	173	182	19%	9.2%
		Eff 1.2	1076.1	1081.8	5.7	30	190			
		Eff 2.1	1081.8	1086.7	4.9	30	163	162	28%	2.1%
		Eff 2.2	1084.5	1089.3	4.8	30	160			
18 Juli 2018	3	Influen 1	1058.8	1086.3	27.5	100	275	271		3.0%
		Influen 2	1060	1086.7	26.7	100	267			
		Eff 1.1	1017	1034.9	17.9	100	179	181	33%	1.7%
		Eff 1.2	1060.9	1079.1	18.2	100	182			
		Eff 2.1	1072	1089.6	17.6	100	176	173	36%	3.5%
		Eff 2.2	1062.8	1079.8	17	100	170			
19 Juli 2018	4	Influen 1	1060.4	1079.6	19.2	100	192	187		4.8%
		Influen 2	1065.8	1084.1	18.3	100	183			
		Eff 1.1	1070.7	1087.2	16.5	100	165	162	14%	4.3%
		Eff 1.2	1066.5	1082.3	15.8	100	158			
		Eff 2.1	1065.1	1078.8	13.7	100	137	138	27%	0.7%
		Eff 2.2	1061.2	1075	13.8	100	138			
21 Juli 2018	6	Influen 1	1275.7	1301.4	25.7	100	257	264		4.9%
		Influen 2	1263.6	1290.6	27	100	270			
		Eff 1.1	1247.8	1267.3	19.5	100	195	196	26%	1.0%

		Eff 1.2	1268.9	1288.6	19.7	100	197			
		Eff 2.1	1279	1297.5	18.5	100	185	184	30%	1.1%
		Eff 2.2	1269.8	1288.1	18.3	100	183			
23 Juli 2018	8	Influen 1	1193.1	1219.5	26.4	100	264	257		5.4%
		Influen 2	1202.6	1227.6	25	100	250			
		Eff 1.1	1209	1225.5	16.5	100	165	159	38%	8.2%
		Eff 1.2	1227.3	1242.5	15.2	100	152			
		Eff 2.1	1227.6	1245.1	17.5	100	175	181	30%	6.1%
		Eff 2.2	1238	1256.6	18.6	100	186			
24 Juli 2018	9	Influen 1	1075	1095.4	20.4	100	204	200		4.0%
		Influen 2	1074.1	1093.7	19.6	100	196			
		Eff 1.1	1075.8	1091.2	15.4	100	154	147	27%	10.2%
		Eff 1.2	1094.2	1108.1	13.9	100	139			
		Eff 2.1	1090	1102.8	12.8	100	128	132	34%	6.8%
		Eff 2.2	1063.9	1077.6	13.7	100	137			
25 Juli 2018	10	Influen 1	1083.8	1105.8	22	100	220	227		6.2%
		Influen 2	1065.6	1089	23.4	100	234			
		Eff 1.1	1062.9	1077.6	14.7	100	147	140	38%	10.0%
		Eff 1.2	1076.7	1090	13.3	100	133			
		Eff 2.1	1070.3	1088.5	18.2	100	182	177	22%	6.2%
		Eff 2.2	1081.6	1098.7	17.1	100	171			
27 Juli 2018	12	Influen 1	1073.3	1093.8	20.5	100	205	198		7.1%
		Influen 2	1069.8	1088.9	19.1	100	191			
		Eff 1.1	1079.6	1094.5	14.9	100	149	143	28%	9.1%
		Eff 1.2	1079.5	1093.1	13.6	100	136			
		Eff 2.1	1088.7	1100.9	12.2	100	122	119	32%	5.0%
		Eff 2.2	1076.6	1088.2	11.6	100	116			
30 Juli 2018	15	Influen 1	1089.4	1109.9	20.5	100	205	204		1.5%
		Influen 2	1074.7	1094.9	20.2	100	202			
		eff komp. 1.1	1069.3	1087.9	18.6	100	186	181	11%	5.5%
		eff komp.	1085.6	1103.2	17.6	100	176			

		1.2								
		eff komp. 2.1	1068.1	1086.1	18	100	180	176	14%	4.5%
		eff komp. 2.2	1075.3	1092.5	17.2	100	172			
		eff komp. 3.1	1249.6	1266.6	17	100	170	168	17%	2.4%
		eff komp. 3.2	1246.8	1263.4	16.6	100	166			
31 Juli 2018	16	Influen 1	1073.3	1087	13.7	50	274	262		9.2%
		Influen 2	1074.7	1087.2	12.5	50	250			
		eff komp. 1.1	1076.1	1085	8.9	50	178	181	9%	9.9%
		eff komp. 1.2	1075.9	1085.1	9.2	50	184			
		eff komp. 2.1	1072	1080	8	50	160	173	10%	15.0%
		eff komp. 2.2	1073.7	1083	9.3	50	186			
		eff komp. 3.1	1070.5	1079	8.5	50	170	162	15%	3.3%
		eff komp. 3.2	1079.2	1086.9	7.7	50	154			

Lampiran 12. Hasil Pengujian Kualitas Air Olahan

1. Kualitas Air Olahan pada Media Penyangga *Luffa Cyllindrica* pada Tahap Aklimatisasi

hari Ke-	Kadar COD			Suhu			pH		
	influent	eff 1	eff 2	influent	eff. 1	eff. 2	influent	eff. 1	eff. 2
4	245	245	435	28	28	28	7.7	8	7.7
5	305	465	635	29	27.5	28	7.9	7.5	7.8
8	325	295	245	28	28	28	8	7.2	7.5
9	365	325	405	27.5	28	28	8.1	7.9	7.9
11	635	525	445	29	28	28	8	7.7	7.5
12	928	1078	1678	28	27.5	28	7.5	7.5	8
13	633	752	770	28	28	28	7.3	7.6	7.2
14	504	587	556	28	28	28	7.6	7.4	7.5
15	443	420	412	28	27.5	28	7.9	7.3	7.8
16	410	483	518	29	28	28	8	7.3	7.8
17	423	433	427	28.5	28	28	7.9	7.4	7.7
18	445	375	402	28	28	28	7.9	7.3	7.7
19	500	366	385	28	28	28	8	7.4	7.6
20	533	406	425	29	27.5	28	7.9	7.3	7.6
21	462	406	475	28	28	27.5	8	7.5	7.9
22	302	383	516	28	28	28	7.9	7.3	7.6
23	210	423	468	29	28.5	28	8	7.4	7.8
24	510	562	610	28	28	27.5	8.1	7.6	7.8
25	385	366	435	28	27.5	27.5	8	7.5	7.8
26	485	320	477	29	28	28	7.4	7.2	6.7

2. Kualitas Air Olahan pada Media Penyangga *Bioball* pada Tahap Aklimatisasi

Hari ke-	COD Reaktor 1			COD Reaktor 2			pH			Temperatur		
	In	Eff	% removal	In	Eff	% removal	In	Eff 1	Eff 2	In	Eff 1	Eff 2
1	30	427	-46%	30	318	-9%	7.9	8.3	8.3	29	27.5	27.5
2	425	360	15%	425	510	-20%	7.0	7.0	7.0	30	28.5	28.5
3	368	302	18%	368	387	-5%	8.1	8.3	8.3	29	27.5	27.5
4	383	389	-2%	383	408	-7%	7.0	8.4	8.3	28	27.5	27.5
5	552	575	-4%	552	448	19%	7.3	7.5	7.4	28	27.5	27.5
7	406	429	-6%	406	464	-14%	7.0	7.0	7.0	27	27	27
8	558	470	16%	558	541	3%	7.3	6.8	7.0	28	27	27
9	856	804	6%	856	793	7%	7.7	7.7	7.8	27	26	26
10	448	379	15%	448	323	28%	7.5	7.3	7.3	27	27	27
11	287	354	-23%	287	318	-11%	7.3	6.8	7.0	27	26	26
12	477	414	13%	477	431	10%	7.0	7.0	7.0	27	27	26.5
13	393	400	-2%	393	400	-2%	6.8	7.0	7.0	27	25	25
14	389	327	16%	389	381	2%	6.9	7.2	7.1	26.5	25	25
15	718	668	7%	718	708	1%	7.0	7.0	7.0	26	25	25
38	745	779	-4%	745	808	-8%	7.0	7.0	7.0	25	24	23.5
39	750	743	1%	750	477	36%	7.2	7.5	7.5	25	24.5	24
40	535	383	28%	535	437	18%	7.0	7.3	7.4	25	24	24
41	433	352	19%	433	406	6%	7.2	7.3	7.3	26	24.5	25
42	441	408	8%	441	400	9%	7.0	7.0	7.0	26	25	25.5
43	423	329	22%	423	331	22%	7.0	7.0	7.0	26.5	25	25
44	354	333	6%	354	333	6%	7.0	7.0	7.0	25	24	25
45	364	331	9%	364	352	3%	7.0	7.0	7.0	25	23.5	24
46	562	533	5%	562	529	6%	7.5	7.8	7.8	26	25.5	25
47	545	506	7%	545	498	9%	7.0	7.0	7.0	24	23.5	23.5
48	510	456	11%	510	456	11%	7.0	7.0	7.0	26	25	25
49	535	491	8%	535	502	6%	7.1	7.4	7.5	25	26	26
50	529	483	9%	529	504	5%	7.3	7.6	7.7	25	23	23.5
51	720	677	6%	720	706	2%						

52	637	602	6%	637	589	8%						
53	675	598	11%	675	558	17%						
54	756	660	13%	756	643	15%	7.0	7.0	7.0	25	24	24
55	693	616	11%	693	595	14%	6.5	6.8	6.8	25	23	24.5

3. Kualitas Air Olahan pada Media Penyangga *Bioball* pada Tahap *Running*

Tanggal	Hari Ke	DO			Kekeruhan			pH			suhu		
		In	Eff. 1	Eff. 2	In	Eff. 1	Eff. 2	In	Eff. 1	Eff. 2	In	Eff. 1	Eff. 2
14-Jul-18	55	2.2	7.1	7.1	65	22.98	6.36	7	7	7	25	24	24
15-Jul-18	56	2.5	7	7	41.64	6.47	11.97	6.5	6.8	6.8	25	23	24.5
16-Jul-18	57	2.1	7.1	7.1	56	20.85	4.85	7	7	7	25	24	24
17-Jul-18	58	2.5	6.6	6.5	40.43	3.63	2.59	7	7	7	26	24	24.5
18-Jul-18	59	1.8	6.5	6.5	52	10.84	4.15	6.6	6.8	6.8	25	24	23.5
19-Jul-18	60	1.2	7	6.6	44.39	2.98	5.44	6.8	6.9	7	26	24	24
20-Jul-18	61	1.5	6.5	6.5	51	9.33	7.36	6.6	6.9	6.9	25.5	23.5	23.5
21-Jul-18	62	2.3	5.4	5.7	44.76	12.88	5.87	7	7	7	24	23	23
23-Jul-18	64	1.4	6.6	6.8	41.52	11.1	5.87	7	7	7	25	23.5	24
24-Jul-18	65	1.9	7.2	7	52	5.07	3.92	6.8	7	7.1	25	23	23
25-Jul-18	66	2	9.1	9.5	45.36	13.72	9.64	7	7	7	24	23	23
27-Jul-18	68	1.8	7.3	7.2	40.19	7.81	6.97	6.6	6.9	6.9	25	23	23.5

4. Kualitas Air Olahan Per-Kompartemen pada Media Penyangga *Bioball* pada Tahap *Running*

Tanggal/ Hari	Hari Ke-	Sampel Reaktor 1	Suhu	DO	pH
30 Juli 2018	15	influent	24	2	6
		Kompartemen 1	22	8.7	6
		kompartemen 2	21	8.7	6
		kompartemen 3	21	8.7	6
31 Juli 2018	16	influent	24	1.9	6
		Kompartemen 1	21	8.7	6
		kompartemen 2	21	8.7	6
		kompartemen 3	21.5	8.7	6