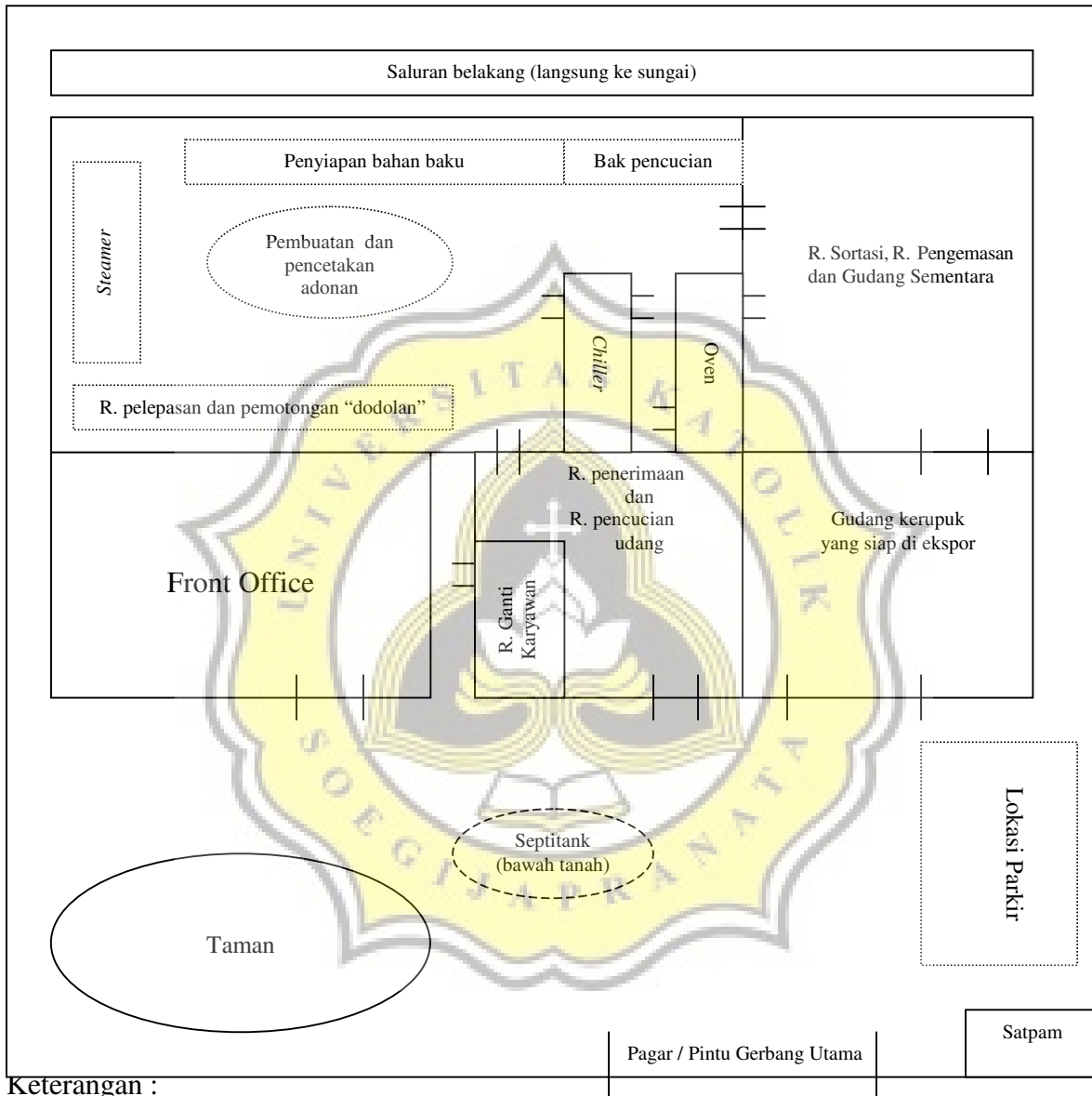


7. LAMPIRAN

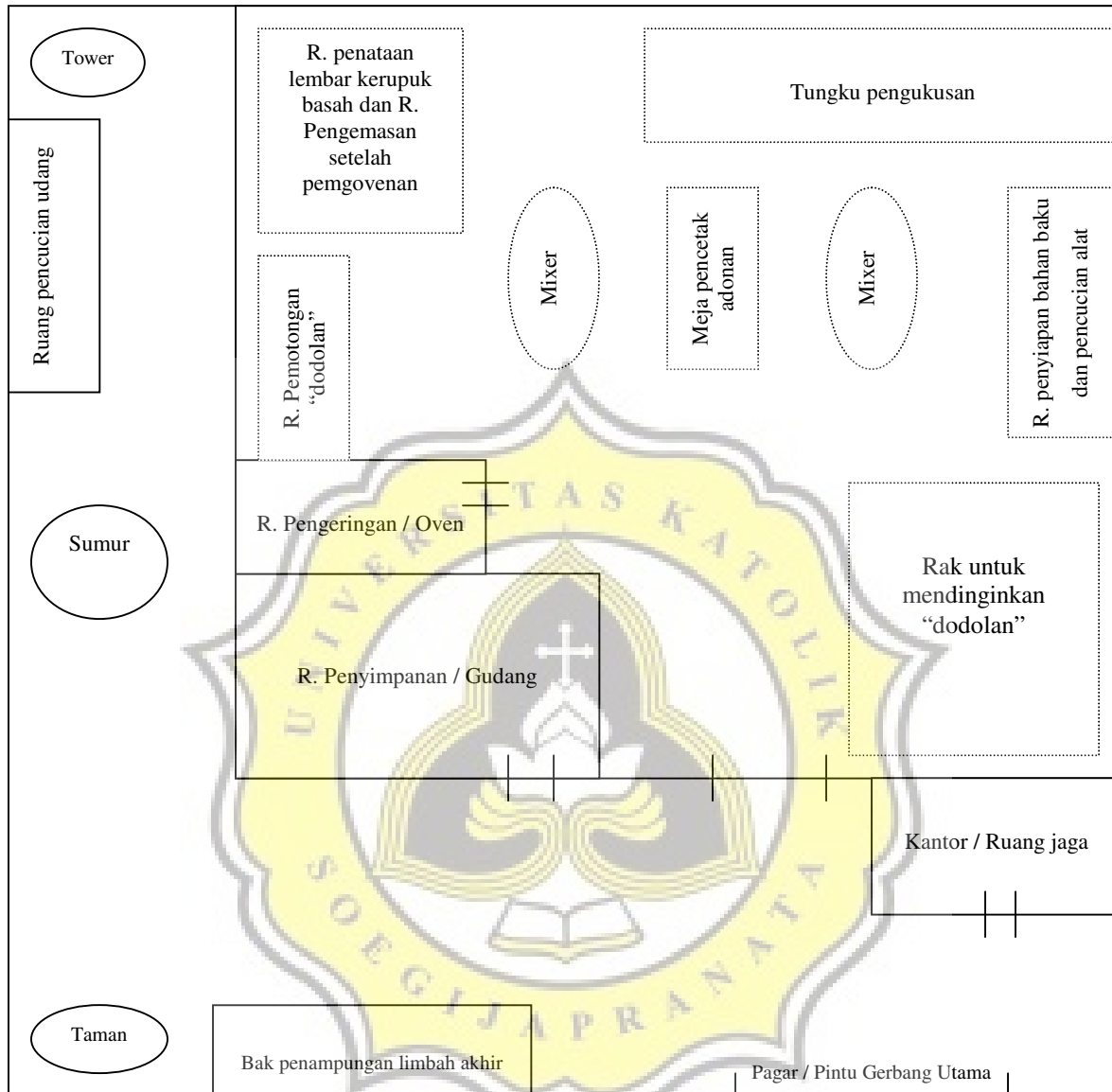
Lampiran 1. Denah Ruang Produksi dan Saluran Pembuangan PT. Indosigma



Keterangan :

- : Lokasi tanpa sekat ruangan
- : Lokasi di bawah tanah

Lampiran 2. Denah Ruang Produksi dan Saluran Pembuangan PT. Surya



Keterangan :

..... : lokasi tanpa sekat ruangan

Lampiran 3. *Material Balance* Proses Produksi Kerupuk Udang PT. Indosigma



Lampiran 4. *Material Balance* Proses Produksi Kerupuk Udang PT. Surya



Lampiran 5. Perhitungan Volume Air yang Digunakan Selama Proses Produksi

Ulangan	Tahapan Proses	PT. Indosigma			PT. Surya		
		Volume air * (L)	Total volume * (L)	Ratio air/ton produk (L)	Volume air (L)	Total volume (L)	Ratio air/ton produk (L)
1	Pencucian udang	89.34			39.56		
	Pembuatan adonan	182.60			60.86		
	Pengukusan	1830.76	2425.70	808.567	1084.77	1215.96	1215.96
	Pencucian alat	324			30.77		
2	Pencucian udang	86.41			33.47		
	Pembuatan adonan	194.78			76.08		
	Pengukusan	1778.84	2380.81	793.603	1086.65	1222.07	1222.07
	Pencucian alat	320.78			25.87		
3	Pencucian udang	87.39			34.45		
	Pembuatan adonan	176.52			70.30		
	Pengukusan	1758.07	2388.00	796	1087.42	1219.31	1219.31
	Pencucian alat	335.76			27.14		
4	Pencucian udang	88.36			36.41		
	Pembuatan adonan	179.56			62.39		
	Pengukusan	1737.30	2321.20	773.733	1085.92	1214.45	1214.45
	Pencucian alat	315.98			29.73		
5	Pencucian udang	85.43			33.52		
	Pembuatan adonan	175			61.47		
	Pengukusan	1623.07	2182.29	727.43	1085.89	1205.45	1205.45
	Pencucian alat	298.79			24.57		

Keterangan :

* kapasitas produksi tiga ton

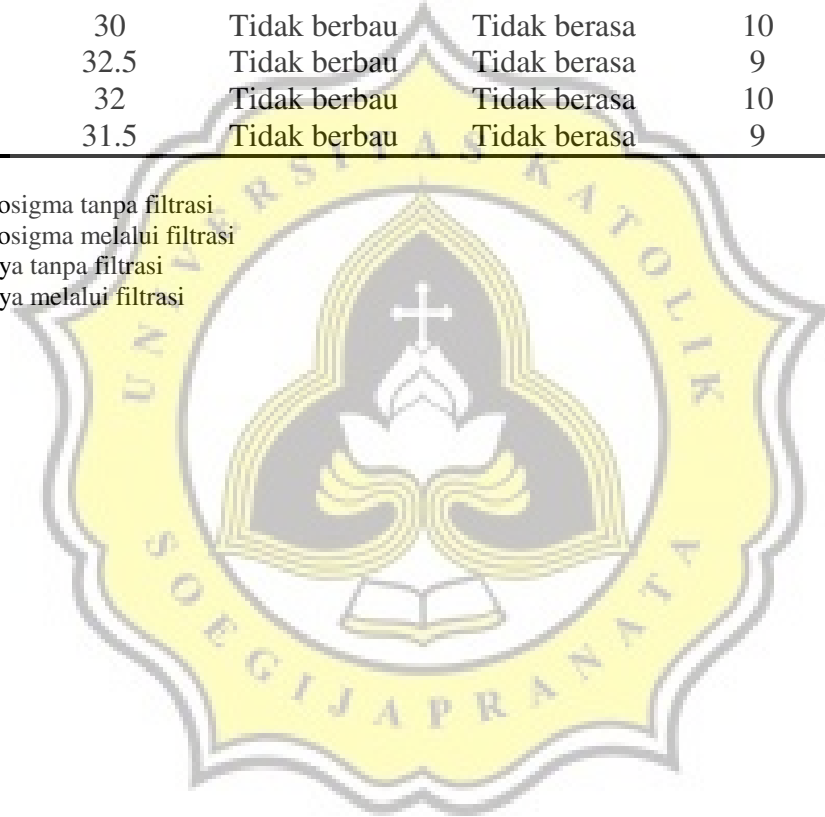
Lampiran 6. Perhitungan Analisa Fisik Air

<i>Hari ke-</i>	<i>Sampel</i>	<i>Ulangan</i>	<i>Suhu (°C)</i>	<i>Bau</i>	<i>Rasa</i>	<i>Warna (Pt Co)</i>	<i>Kekeruhan (ppm)</i>	<i>TS (ppm)</i>
1	A	1	28	Tidak berbau	Tidak berasa	10	0.22	1440
		2	28	Tidak berbau	Tidak berasa	10	0.20	1460
		3	28	Tidak berbau	Tidak berasa	10	0.23	1500
	B	1	30	Tidak berbau	Tidak berasa	10	0.20	1340
		2	30	Tidak berbau	Tidak berasa	10	0.19	1360
		3	30	Tidak berbau	Tidak berasa	9	0.20	1320
	C	1	28	Tidak berbau	Tidak berasa	11	0.23	1560
		2	28.5	Tidak berbau	Tidak berasa	10	0.24	1520
		3	28	Tidak berbau	Tidak berasa	10	0.24	1580
	D	1	32	Tidak berbau	Tidak berasa	10	0.21	1420
		2	32.5	Tidak berbau	Tidak berasa	10	0.21	1400
		3	32	Tidak berbau	Tidak berasa	9	0.20	1420
2	A	1	28.5	Tidak berbau	Tidak berasa	10	0.22	1420
		2	28	Tidak berbau	Tidak berasa	9	0.22	1480
		3	28.5	Tidak berbau	Tidak berasa	9	0.21	1440
	B	1	29.5	Tidak berbau	Tidak berasa	10	0.20	1300
		2	30	Tidak berbau	Tidak berasa	9	0.20	1320
		3	30	Tidak berbau	Tidak berasa	9	0.20	1340
	C	1	29	Tidak berbau	Tidak berasa	10	0.25	1580
		2	29.5	Tidak berbau	Tidak berasa	11	0.24	1540
		3	30	Tidak berbau	Tidak berasa	11	0.24	1500
	D	1	31.5	Tidak berbau	Tidak berasa	10	0.21	1320
		2	32	Tidak berbau	Tidak berasa	9	0.22	1280
		3	31	Tidak berbau	Tidak berasa	11	0.22	1340
3	A	1	29	Tidak berbau	Tidak berasa	10	0.20	1480
		2	28	Tidak berbau	Tidak berasa	10	0.22	1440
		3	28.5	Tidak berbau	Tidak berasa	9	0.23	1500

B	1	30.5	Tidak berbau	Tidak berasa	10	0.20	1220
	2	31	Tidak berbau	Tidak berasa	9	0.19	1260
	3	30	Tidak berbau	Tidak berasa	9	0.19	1300
C	1	30	Tidak berbau	Tidak berasa	10	0.24	1480
	2	29.5	Tidak berbau	Tidak berasa	11	0.22	1520
	3	30	Tidak berbau	Tidak berasa	10	0.22	1480
D	1	32.5	Tidak berbau	Tidak berasa	9	0.21	1380
	2	32	Tidak berbau	Tidak berasa	10	0.21	1300
	3	31.5	Tidak berbau	Tidak berasa	9	0.22	1380

Keterangan :

- A : air PT. Indosigma tanpa filtrasi
 B : air PT. Indosigma melalui filtrasi
 C : air PT. Surya tanpa filtrasi
 D : air PT. Surya melalui filtrasi



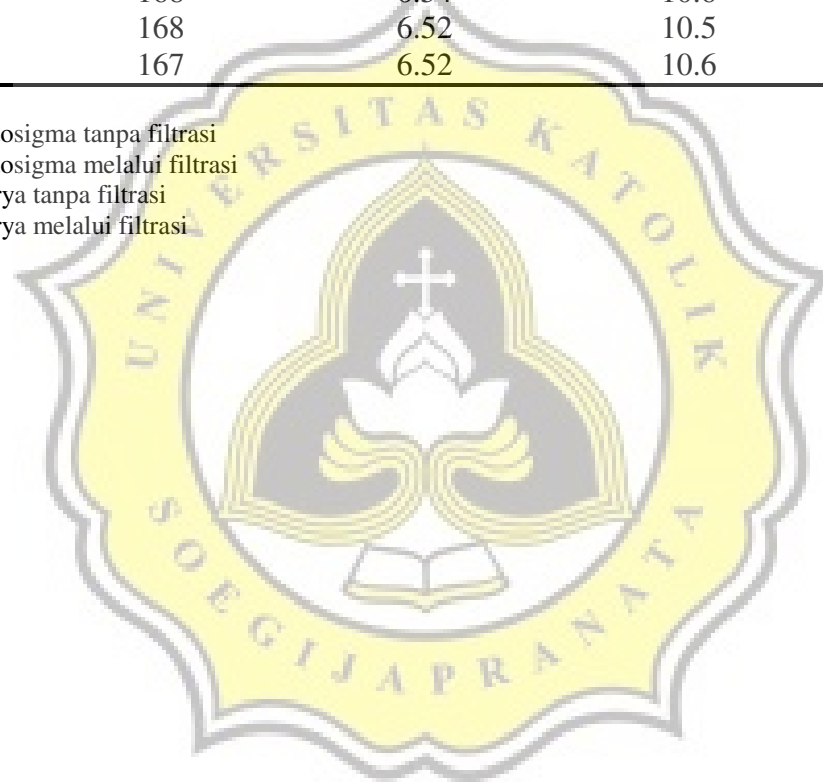
Lampiran 7. Perhitungan Analisa Kimia Air

<i>Hari ke-</i>	<i>Sampel</i>	<i>Ulangan</i>	<i>Kesadahan (ppm)</i>	<i>pH</i>	<i>DO (ppm)</i>	<i>BOD (ppm)</i>
1	A	1	172	6.40	10.4	0.92
		2	173	6.41	10.4	0.93
		3	172	6.42	10.5	0.93
	B	1	167	6.52	10.6	0.96
		2	167	6.54	10.6	0.95
		3	168	6.52	10.6	0.96
	C	1	174	6.41	10.6	0.96
		2	175	6.43	10.7	0.97
		3	176	6.42	10.5	0.95
	D	1	170	6.53	10.4	0.98
		2	169	6.51	10.6	0.97
		3	170	6.53	10.7	0.97
2	A	1	173	6.40	10.3	0.93
		2	173	6.40	10.4	0.92
		3	174	6.41	10.3	0.93
	B	1	166	6.52	10.2	0.96
		2	168	6.51	10.5	0.96
		3	167	6.51	10.2	0.94
	C	1	173	6.44	10.7	0.95
		2	173	6.41	10.5	0.93
		3	174	6.44	10.5	0.95
	D	1	170	6.52	10.7	0.96
		2	171	6.49	10.7	0.98
		3	170	6.51	10.5	0.98
3	A	1	174	6.41	10.8	0.94
		2	176	6.44	10.7	0.93
		3	175	6.42	10.7	0.94
	B	1	168	6.50	10.3	0.95

	2	170	6.54	10.4	0.95
	3	170	6.53	10.4	0.94
C	1	175	6.43	10.6	0.96
	2	176	6.43	10.6	0.98
	3	176	6.41	10.5	0.98
D	1	168	6.54	10.6	0.98
	2	168	6.52	10.5	0.99
	3	167	6.52	10.6	0.96

Keterangan :

- A : air PT. Indosigma tanpa filtrasi
 B : air PT. Indosigma melalui filtrasi
 C : air PT. Surya tanpa filtrasi
 D : air PT. Surya melalui filtrasi



Lampiran 8. Perhitungan Analisa Mikrobiologi Air

<i>Hari ke-</i>	<i>Sampel</i>	<i>Ulangan</i>	<i>MPN</i>	<i>Coliform</i>
1	A	1	9	7
		2	11	9
		3	9	8
	B	1	9	9
		2	7	6
		3	9	7
	C	1	7	9
		2	11	7
		3	9	9
	D	1	9	7
		2	9	11
		3	9	9
2	A	1	9	8
		2	7	7
		3	11	7
	B	1	5	5
		2	7	6
		3	7	9
	C	1	11	7
		2	9	7
		3	9	6
	D	1	9	9
		2	7	7
		3	7	9
3	A	1	9	8
		2	9	9
		3	9	6
	B	1	7	8
		2	9	6
		3	7	9
	C	1	11	7
		2	11	8
		3	7	7
	D	1	7	9
		2	7	7
		3	7	6

Keterangan :

- A : air PT. Indosigma melalui filtrasi
- B : air PT. Indosigma tanpa filtrasi
- C : air artetis PT. Surya melalui filtrasi
- D : air PT. Surya tanpa filtrasi

Lampiran 9. Uji Normalitas dan Uji T Kualitas Air Antar Perusahaan

Tests of Normality

Lokasi		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
cuci_udang	PT. Indosigma	.136	5	.200*	.987	5	.968
	PT. Surya	.385	5	.015	.718	5	.015

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

Lokasi		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
adonan	PT. Indosigma	.254	5	.200*	.860	5	.230
	PT. Surya	.316	5	.115	.834	5	.149

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

Lokasi		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
pengukuran	PT. Indosigma	.257	5	.200*	.929	5	.591
	PT. Surya	.204	5	.200*	.973	5	.896

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

Lokasi		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
cuci_alat	PT. Indosigma	.210	5	.200*	.967	5	.856
	PT. Surya	.192	5	.200*	.946	5	.712

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

Lokasi	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
tot_vol PT. Indosigma	.267	5	.200*	.866	5	.251
PT. Surya	.237	5	.200*	.933	5	.619

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction



T-Test

Group Statistics

Lokasi		N	Mean	Std. Deviation	Std. Error Mean
cuci_udang	PT. Indosigma	5	29.1287	.51493	.23028
	PT. Surya	5	35.1140	2.53709	1.13462

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
cuci_udang	Equal variances assumed	3.763	.088	-5.170	8	.001	-5.98533	1.15775	-8.65512	-3.31555
	Equal variances not assumed			-5.170	4.329	.005	-5.98533	1.15775	-9.10569	-2.86498

T-Test

Group Statistics

Lokasi		N	Mean	Std. Deviation	Std. Error Mean
adonan	PT. Indosigma	5	60.5640	2.62572	1.17426
	PT. Surya	5	66.2200	6.70498	2.99856

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
adonan	Equal variances assumed	7.971	.022	-1.756	8	.117	-5.65600	3.22028	-13.08199	1.76999
	Equal variances not assumed			-1.756	5.199	.137	-5.65600	3.22028	-13.83976	2.52776

T-Test

Group Statistics

Lokasi		N	Mean	Std. Deviation	Std. Error Mean
pengukuran	PT. Indosigma	5	581.8693	25.60117	11.44919
	PT. Surya	5	1086.1300	.98562	.44078

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
pengukuran	Equal variances assumed	5.079	.054	-44.011	8	.000	-504.26067	11.45767	-530.682	-477.839
	Equal variances not assumed			-44.011	4.012	.000	-504.26067	11.45767	-536.035	-472.486

T-Test

Group Statistics

Lokasi		N	Mean	Std. Deviation	Std. Error Mean
cuci_alat	PT. Indosigma	5	106.3540	4.49262	2.00916
	PT. Surya	5	27.6160	2.59663	1.16125

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
cuci_alat	Equal variances assumed	.547	.481	33.930	8	.000	78.73800	2.32061	73.38667	84.08933
	Equal variances not assumed			33.930	6.404	.000	78.73800	2.32061	73.14542	84.33058

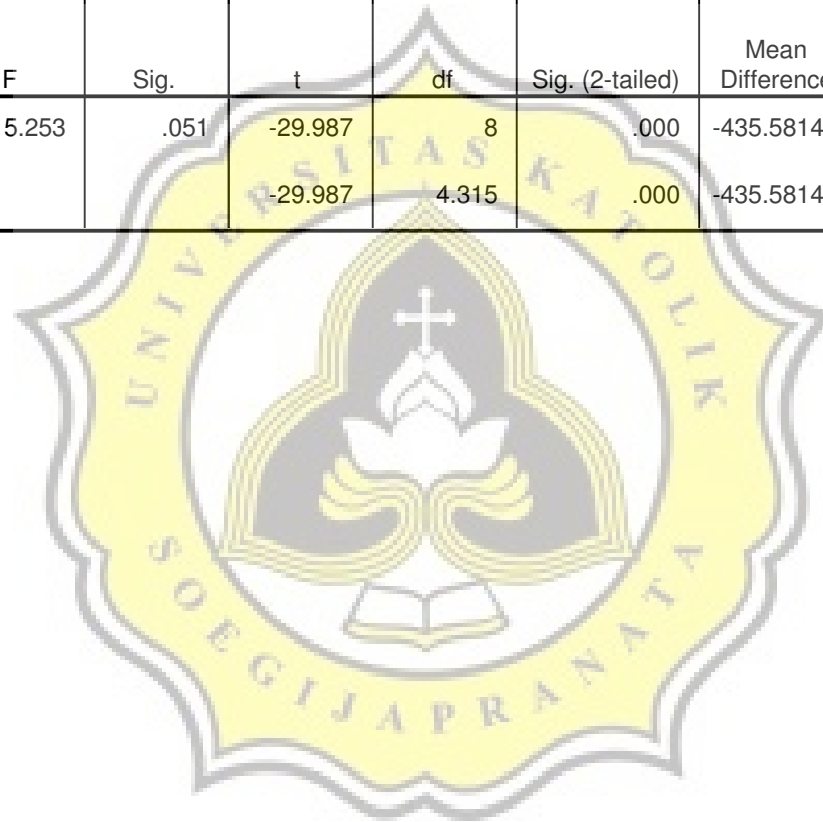
T-Test

Group Statistics

Lokasi		N	Mean	Std. Deviation	Std. Error Mean
tot_vol	PT. Indosigma	5	779.8666	31.85870	14.24764
	PT. Surya	5	1215.4480	6.32424	2.82829

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
tot_vol	Equal variances assumed	5.253	.051	-29.987	8	.000	-435.58140	14.52565	-469.078	-402.085
	Equal variances not assumed			-29.987	4.315	.000	-435.58140	14.52565	-474.777	-396.386



Lampiran 10. Uji Normalitas dan Uji T Kualitas Air Antar Perusahaan

SUHU

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	28.2778	30.1111
	Std. Deviation	.36324	.41667
Most Extreme Differences	Absolute	.333	.383
	Positive	.333	.383
	Negative	-.222	-.284
Kolmogorov-Smirnov Z		1.000	1.149
Asymp. Sig. (2-tailed)		.270	.143

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	29.1667	31.8889
	Std. Deviation	.82916	.48591
Most Extreme Differences	Absolute	.212	.257
	Positive	.157	.187
	Negative	-.212	-.257
Kolmogorov-Smirnov Z		.635	.771
Asymp. Sig. (2-tailed)		.815	.591

a. Test distribution is Normal.

b. Calculated from data.

WARNA

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	9.6667	9.6667
	Std. Deviation	.50000	.50000
Most Extreme Differences	Absolute	.414	.414
	Positive	.252	.252
	Negative	-.414	-.414
Kolmogorov-Smirnov Z		1.243	1.243
Asymp. Sig. (2-tailed)		.091	.091

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	10.4444	9.6667
	Std. Deviation	.52705	.70711
Most Extreme Differences	Absolute	.356	.272
	Positive	.356	.272
	Negative	-.299	-.237
Kolmogorov-Smirnov Z		1.068	.815
Asymp. Sig. (2-tailed)		.204	.520

a. Test distribution is Normal.

b. Calculated from data.

KERUH

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	.2167	.1967
	Std. Deviation	.01118	.00500
Most Extreme Differences	Absolute	.284	.414
	Positive	.161	.252
	Negative	-.284	-.414
Kolmogorov-Smirnov Z		.852	1.243
Asymp. Sig. (2-tailed)		.463	.091

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	.2356	.2122
	Std. Deviation	.01014	.00667
Most Extreme Differences	Absolute	.336	.297
	Positive	.219	.297
	Negative	-.336	-.258
Kolmogorov-Smirnov Z		1.008	.892
Asymp. Sig. (2-tailed)		.261	.404

a. Test distribution is Normal.

b. Calculated from data.

TS

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	1462.2222	1306.6667
	Std. Deviation	29.05933	43.58899
Most Extreme Differences	Absolute	.222	.217
	Positive	.222	.111
	Negative	-.174	-.217
Kolmogorov-Smirnov Z		.667	.651
Asymp. Sig. (2-tailed)		.766	.790

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	1528.8889	1360.0000
	Std. Deviation	38.87301	51.96152
Most Extreme Differences	Absolute	.146	.205
	Positive	.146	.124
	Negative	-.128	-.205
Kolmogorov-Smirnov Z		.438	.616
Asymp. Sig. (2-tailed)		.991	.842

a. Test distribution is Normal.

b. Calculated from data.

SADAH NPar Tests

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	173.5556	167.8889
	Std. Deviation	1.33333	1.36423
Most Extreme Differences	Absolute	.217	.245
	Positive	.217	.245
	Negative	-.122	-.161
Kolmogorov-Smirnov Z		.651	.736
Asymp. Sig. (2-tailed)		.790	.651

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	174.6667	169.2222
	Std. Deviation	1.22474	1.30171
Most Extreme Differences	Absolute	.195	.280
	Positive	.151	.164
	Negative	-.195	-.280
Kolmogorov-Smirnov Z		.586	.841
Asymp. Sig. (2-tailed)		.883	.478

a. Test distribution is Normal.

b. Calculated from data.

PH

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	6.4122	6.5211
	Std. Deviation	.01302	.01364
Most Extreme Differences	Absolute	.234	.199
	Positive	.234	.199
	Negative	-.174	-.139
Kolmogorov-Smirnov Z		.703	.597
Asymp. Sig. (2-tailed)		.706	.868

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	6.4244	6.5189
	Std. Deviation	.01236	.01453
Most Extreme Differences	Absolute	.229	.197
	Positive	.212	.136
	Negative	-.229	-.197
Kolmogorov-Smirnov Z		.687	.591
Asymp. Sig. (2-tailed)		.733	.875

a. Test distribution is Normal.

b. Calculated from data.

DO

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	10.5000	7.4222
	Std. Deviation	.18708	.16415
Most Extreme Differences	Absolute	.259	.194
	Positive	.259	.139
	Negative	-.191	-.194
Kolmogorov-Smirnov Z		.777	.582
Asymp. Sig. (2-tailed)		.582	.887

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	10.5778	7.5889
	Std. Deviation	.08333	.10541
Most Extreme Differences	Absolute	.269	.209
	Positive	.269	.146
	Negative	-.175	-.209
Kolmogorov-Smirnov Z		.807	.626
Asymp. Sig. (2-tailed)		.532	.828

a. Test distribution is Normal.

b. Calculated from data.

BOD

NPar Tests : PT INDOSIGMA

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	.9522	.7300
	Std. Deviation	.00833	.00707
Most Extreme Differences	Absolute	.269	.278
	Positive	.175	.278
	Negative	-.269	-.278
Kolmogorov-Smirnov Z		.807	.833
Asymp. Sig. (2-tailed)		.532	.491

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	.9744	.7589
	Std. Deviation	.01014	.01616
Most Extreme Differences	Absolute	.264	.180
	Positive	.181	.153
	Negative	-.264	-.180
Kolmogorov-Smirnov Z		.791	.540
Asymp. Sig. (2-tailed)		.559	.932

a. Test distribution is Normal.

b. Calculated from data.

MPN NPar Tests : PT INDOSIGMA

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	9.2222	7.4444
	Std. Deviation	1.20185	1.33333
Most Extreme Differences	Absolute	.351	.297
	Positive	.351	.297
	Negative	-.316	-.258
Kolmogorov-Smirnov Z		1.053	.892
Asymp. Sig. (2-tailed)		.217	.404

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	9.4444	7.8889
	Std. Deviation	1.66667	1.05409
Most Extreme Differences	Absolute	.269	.356
	Positive	.175	.356
	Negative	-.269	-.299
Kolmogorov-Smirnov Z		.807	1.068
Asymp. Sig. (2-tailed)		.532	.204

a. Test distribution is Normal.

b. Calculated from data.

COLI

NPar Tests: PT Indosigma

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	9.2222	7.4444
	Std. Deviation	1.20185	1.33333
Most Extreme Differences	Absolute	.351	.297
	Positive	.351	.297
	Negative	-.316	-.258
Kolmogorov-Smirnov Z		1.053	.892
Asymp. Sig. (2-tailed)		.217	.404

a. Test distribution is Normal.

b. Calculated from data.

NPar Tests: PT Surya

One-Sample Kolmogorov-Smirnov Test

		no filtration	filtration
N		9	9
Normal Parameters ^{a,b}	Mean	9.4444	7.8889
	Std. Deviation	1.66667	1.05409
Most Extreme Differences	Absolute	.269	.356
	Positive	.175	.356
	Negative	-.269	-.299
Kolmogorov-Smirnov Z		.807	1.068
Asymp. Sig. (2-tailed)		.532	.204

a. Test distribution is Normal.

b. Calculated from data.

T-Test: Suhu

Group Statistics

lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration PT. Indosigma	9	28.2778	.36324	.12108
PT. Surya	9	29.1667	.82916	.27639
filtration PT. Indosigma	9	30.1111	.41667	.13889
PT. Surya	9	31.8889	.48591	.16197

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
no_filtration	Equal variances assumed	9.052	.008	-2.946	16	.009	-.88889	.30174	-1.52856	-.24922
	Equal variances not assumed			-2.946	10.962	.013	-.88889	.30174	-1.55331	-.22447
filtration	Equal variances assumed	.408	.532	-8.332	16	.000	-1.77778	.21337	-2.23009	-1.32546
	Equal variances not assumed			-8.332	15.636	.000	-1.77778	.21337	-2.23095	-1.32461

T-Test : Warna

Group Statistics

	lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration	PT. Indosigma	9	9.6667	.50000	.16667
	PT. Surya	9	10.4444	.52705	.17568
filtration	PT. Indosigma	9	9.6667	.50000	.16667
	PT. Surya	9	9.6667	.70711	.23570

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
no_filtration	Equal variances assumed	.703	.414	-3.212	16	.005	-.77778	.24216	-1.29114	-.26442
	Equal variances not assumed			-3.212	15.956	.005	-.77778	.24216	-1.29125	-.26430
filtration	Equal variances assumed	1.488	.240	.000	16	1.000	.00000	.28868	-.61196	.61196
	Equal variances not assumed			.000	14.400	1.000	.00000	.28868	-.61754	.61754

T-Test: Keruh

Group Statistics

	lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration	PT. Indosigma	9	.2167	.01118	.00373
	PT. Surya	9	.2356	.01014	.00338
filtration	PT. Indosigma	9	.1967	.00500	.00167
	PT. Surya	9	.2122	.00667	.00222

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
no_filtration	Equal variances assumed	.077	.785	-3.755	16	.002	-.01889	.00503	-.02955	-.00822
	Equal variances not assumed			-3.755	15.849	.002	-.01889	.00503	-.02956	-.00822
filtration	Equal variances assumed	.291	.597	-5.600	16	.000	-.01556	.00278	-.02144	-.00967
	Equal variances not assumed			-5.600	14.837	.000	-.01556	.00278	-.02148	-.00963

T-Test: TS

Group Statistics

lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration PT. Indosigma	9	1462.2222	29.05933	9.68644
PT. Surya	9	1528.8889	38.87301	12.95767
filtration PT. Indosigma	9	1306.6667	43.58899	14.52966
PT. Surya	9	1360.0000	51.96152	17.32051

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
no_filtration	Equal variances assumed	.967	.340	-4.121	16	.001	-66.66667	16.17802	-100.963	-32.37079
	Equal variances not assumed			-4.121	14.813	.001	-66.66667	16.17802	-101.187	-32.14617
filtration	Equal variances assumed	1.069	.317	-2.359	16	.031	-53.33333	22.60777	-101.260	-5.40701
	Equal variances not assumed			-2.359	15.530	.032	-53.33333	22.60777	-101.378	-5.28893

T-Test: Sadah

Group Statistics

	lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration	PT. Indosigma	9	173.5556	1.33333	.44444
	PT. Surya	9	174.6667	1.22474	.40825
filtration	PT. Indosigma	9	167.8889	1.36423	.45474
	PT. Surya	9	169.2222	1.30171	.43390

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
no_filtration	Equal variances assumed	.007	.935	-1.841	16	.084	-1.11111	.60349	-2.39045	.16823
	Equal variances not assumed			-1.841	15.886	.084	-1.11111	.60349	-2.39120	.16897
filtration	Equal variances assumed	.046	.833	-2.121	16	.050	-1.33333	.62854	-2.66578	-.00089
	Equal variances not assumed			-2.121	15.965	.050	-1.33333	.62854	-2.66602	-.00065

T-Test: PH

Group Statistics

	lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration	PT. Indosigma	9	6.4122	.01302	.00434
	PT. Surya	9	6.4244	.01236	.00412
filtration	PT. Indosigma	9	6.5211	.01364	.00455
	PT. Surya	9	6.5189	.01453	.00484

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
no_filtration	Equal variances assumed	.096	.760	-2.043	16	.058	-.01222	.00598	-.02491	.00046
	Equal variances not assumed			-2.043	15.957	.058	-.01222	.00598	-.02491	.00047
filtration	Equal variances assumed	.000	1.000	.334	16	.742	.00222	.00664	-.01186	.01631
	Equal variances not assumed			.334	15.937	.742	.00222	.00664	-.01187	.01631

T-Test: DO

Group Statistics

lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration PT. Indosigma	9	10.5000	.18708	.06236
PT. Surya	9	10.5778	.08333	.02778
filtration PT. Indosigma	9	7.4222	.16415	.05472
PT. Surya	9	7.5889	.10541	.03514

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
no_filtration	Equal variances assumed	7.193	.016	-1.139	16	.271	-.07778	.06827	-.22250	.06694
	Equal variances not assumed			-1.139	11.054	.279	-.07778	.06827	-.22794	.07239
filtration	Equal variances assumed	2.699	.120	-2.563	16	.021	-.16667	.06503	-.30452	-.02882
	Equal variances not assumed			-2.563	13.639	.023	-.16667	.06503	-.30648	-.02685

T-Test: BOD

Group Statistics

lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration PT. Indosigma	9	.9522	.00833	.00278
PT. Surya	9	.9744	.01014	.00338
filtration PT. Indosigma	9	.7300	.00707	.00236
PT. Surya	9	.7589	.01616	.00539

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
no_filtration	Equal variances assumed	.504	.488	-5.080	16	.000	-.02222	.00437	-.03150	-.01295
	Equal variances not assumed			-5.080	15.422	.000	-.02222	.00437	-.03152	-.01292
filtration	Equal variances assumed	4.785	.044	-4.914	16	.000	-.02889	.00588	-.04135	-.01643
	Equal variances not assumed			-4.914	10.955	.000	-.02889	.00588	-.04184	-.01594

T-Test: MPN

Group Statistics

lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration PT. Indosigma	9	9.2222	1.20185	.40062
PT. Surya	9	9.4444	1.66667	.55556
filtration PT. Indosigma	9	7.4444	1.33333	.44444
PT. Surya	9	7.8889	1.05409	.35136

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
no_filtration	Equal variances assumed	2.309	.148	-.324	16	.750	-.22222	.68493	-1.67422	1.22977
	Equal variances not assumed			-.324	14.549	.750	-.22222	.68493	-1.68608	1.24163
filtration	Equal variances assumed	.038	.848	-.784	16	.444	-.44444	.56656	-1.64549	.75660
	Equal variances not assumed			-.784	15.191	.445	-.44444	.56656	-1.65071	.76182

T-Test: COLI

Group Statistics

lokasi	N	Mean	Std. Deviation	Std. Error Mean
no_filtration PT. Indosigma	9	9.2222	1.20185	.40062
PT. Surya	9	9.4444	1.66667	.55556
filtration PT. Indosigma	9	7.4444	1.33333	.44444
PT. Surya	9	7.8889	1.05409	.35136

Independent Samples Test

		Levene' s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
no_filtration	Equal variances assumed	2.309	.148	-.324	16	.750	-.22222	.68493	-1.67422	1.22977
	Equal variances not assumed			-.324	14.549	.750	-.22222	.68493	-1.68608	1.24163
filtration	Equal variances assumed	.038	.848	-.784	16	.444	-.44444	.56656	-1.64549	.75660
	Equal variances not assumed			-.784	15.191	.445	-.44444	.56656	-1.65071	.76182

Lampiran 11. Uji T Kualitas Air Tanpa Filtrasi dan Dengan Filtrasi Setiap Perusahaan

T-Test: PT Indosigma-SUHU

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	28.2778	.36324	.12108
no_filtration	9	30.1111	.41667	.13889

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	233.545	8	.000	28.27778	27.9986	28.5570
no_filtration	216.800	8	.000	30.11111	29.7908	30.4314

T-Test: PT Surya-SUHU

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	29.1667	.82916	.27639
no_filtration	9	31.8889	.48591	.16197

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	105.529	8	.000	29.16667	28.5293	29.8040
no_filtration	196.880	8	.000	31.88889	31.5154	32.2624

T-Test: PT Indosigma-WARNA

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	9.6667	.50000	.16667
no_filtration	9	9.6667	.50000	.16667

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	58.000	8	.000	9.66667	9.2823	10.0510
no_filtration	58.000	8	.000	9.66667	9.2823	10.0510

T-Test: PT Surya-WARNA

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	10.4444	.52705	.17568
no_filtration	9	9.6667	.70711	.23570

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	59.451	8	.000	10.44444	10.0393	10.8496
no_filtration	41.012	8	.000	9.66667	9.1231	10.2102

T-Test: PT Indosigma-KERUH

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	.2167	.01118	.00373
no_filtration	9	.1967	.00500	.00167

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	58.138	8	.000	.21667	.2081	.2253
no_filtration	118.000	8	.000	.19667	.1928	.2005

T-Test: PT Surya-KERUH**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	.2356	.01014	.00338
no_filtration	9	.2122	.00667	.00222

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	69.705	8	.000	.23556	.2278	.2433
no_filtration	95.500	8	.000	.21222	.2071	.2173

T-Test: PT Indosigma-TS**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	1462.2222	29.05933	9.68644
no_filtration	9	1306.6667	43.58899	14.52966

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	150.956	8	.000	1462.2222	1439.8852	1484.5592
no_filtration	89.931	8	.000	1306.6667	1273.1612	1340.1721

T-Test: PT Surya-TS**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	1528.8889	38.87301	12.95767
no_filtration	9	1360.0000	51.96152	17.32051

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	117.991	8	.000	1528.8889	1499.0084	1558.7693
no_filtration	78.520	8	.000	1360.0000	1320.0588	1399.9412

T-Test: PT Indosigma-Sadah**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	173.5556	1.33333	.44444
no_filtration	9	167.8889	1.36423	.45474

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	390.500	8	.000	173.55556	172.5307	174.5804
no_filtration	369.196	8	.000	167.88889	166.8403	168.9375

T-Test: PT Surya-Sadah**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	174.6667	1.22474	.40825
no_filtration	9	169.2222	1.30171	.43390

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	427.844	8	.000	174.66667	173.7252	175.6081
no_filtration	390.000	8	.000	169.22222	168.2216	170.2228

T-Test: PT Indosigma-PH**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	6.4122	.01302	.00434
no_filtration	9	6.5211	.01364	.00455

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	1477.802	8	.000	6.41222	6.4022	6.4222
no_filtration	1434.025	8	.000	6.52111	6.5106	6.5316

T-Test: PT Surya-PH**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	6.4244	.01236	.00412
no_filtration	9	6.5189	.01453	.00484

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	1559.289	8	.000	6.42444	6.4149	6.4339
no_filtration	1345.982	8	.000	6.51889	6.5077	6.5301

T-Test: PT Indosigma-DO**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	10.5000	.18708	.06236
no_filtration	9	7.4222	.16415	.05472

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	168.375	8	.000	10.50000	10.3562	10.6438
no_filtration	135.650	8	.000	7.42222	7.2960	7.5484

T-Test: PT Surya-DO**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	10.5778	.08333	.02778
no_filtration	9	7.5889	.10541	.03514

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	380.800	8	.000	10.57778	10.5137	10.6418
no_filtration	215.984	8	.000	7.58889	7.5079	7.6699

T-Test: PT Indosigma - BOD**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	.9522	.00833	.00278
no_filtration	9	.7300	.00707	.00236

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	342.800	8	.000	.95222	.9458	.9586
no_filtration	309.713	8	.000	.73000	.7246	.7354

T-Test: PT Surya-BOD**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	.9744	.01014	.00338
no_filtration	9	.7589	.01616	.00539

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	288.356	8	.000	.97444	.9667	.9822
no_filtration	140.892	8	.000	.75889	.7465	.7713

T-Test: PT Indosigma-MPN**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	9.2222	1.20185	.40062
no_filtration	9	7.4444	1.33333	.44444

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	23.020	8	.000	9.22222	8.2984	10.1460
no_filtration	16.750	8	.000	7.44444	6.4196	8.4693

T-Test: PT Surya-MPN**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	9.4444	1.66667	.55556
no_filtration	9	7.8889	1.05409	.35136

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	17.000	8	.000	9.44444	8.1633	10.7256
no_filtration	22.452	8	.000	7.88889	7.0786	8.6991

T-Test: PT Indosigma-COLI**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	9.2222	1.20185	.40062
no_filtration	9	7.4444	1.33333	.44444

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	23.020	8	.000	9.22222	8.2984	10.1460
no_filtration	16.750	8	.000	7.44444	6.4196	8.4693

T-Test: PT Surya-COLI**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
filtration	9	9.4444	1.66667	.55556
no_filtration	9	7.8889	1.05409	.35136

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
filtration	17.000	8	.000	9.44444	8.1633	10.7256
no_filtration	22.452	8	.000	7.88889	7.0786	8.6991

Lampiran 12. Peraturan Pemerintah Indonesian No. 82 Tahun 2001

PARAMETER	SATUAN	KELAS				Keterangan
		I	II	III	IV	
FISIKA						
Temperatur	°C	deviasi 3	deviasi 3	deviasi 3	deviasi 5	Deviasi temperatur dari keadaan alamiahnya
Residu Terlarut	mg/L	1000	1000	1000	2000	
Residu Tersuspensi	mg/L	50	50	400	400	Bagi pengolahan air minum secara konvensional, residu tersuspensi < 5000 mg/L
KIMIA ANORGANIK						
Ph		6 - 9	6 - 9	6 - 9	5 - 9	Apabila secara alamiah di luar rentang tersebut, maka ditentukan berdasarkan kondisi alamiah
bod	mg/L	2	3	6	12	
cod	mg/L	10	25	50	100	
do	mg/L	6	4	3	0	Angka batas minimum
Total fosfat sbg P	mg/L	0,2	0,2	1	5	
NO3 sebagai N	mg/L	10	10	20	20	
NH3-N	mg/L	0,5	(-)	(-)	(-)	Bagi Perikanan, kandungan amonia bebas untuk ikan yang peka ≤ 0,02 mg/L sebagai NH ₃
Arsen	mg/L	0,05	1	1	1	
Kobalt	mg/L	0,2	0,2	0,2	0,2	
Barium	mg/L	1	(-)	(-)	(-)	
Boron	mg/L	1	1	1	1	
Selenium	mg/L	0,01	0,05	0,05	0,05	
Kadmium	mg/L	0,01	0,01	0,01	0,01	
Khrom (IV)	mg/L	0,05	0,05	0,05	1	
Tembaga	mg/L	0,02	0,02	0,02	0,02	Bagi pengolahan air minum secara konvensional, Cu ≤ 1 mg/L
Besi	mg/L	0,3	(-)	(-)	(-)	Bagi pengolahan air minum secara konvensional, Fe ≤ 5 mg/L
Timbal	mg/L	0,03	0,03	0,03	1	Bagi pengolahan air minum

						secara konvensional, Pb \leq 0,1 mg/L
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