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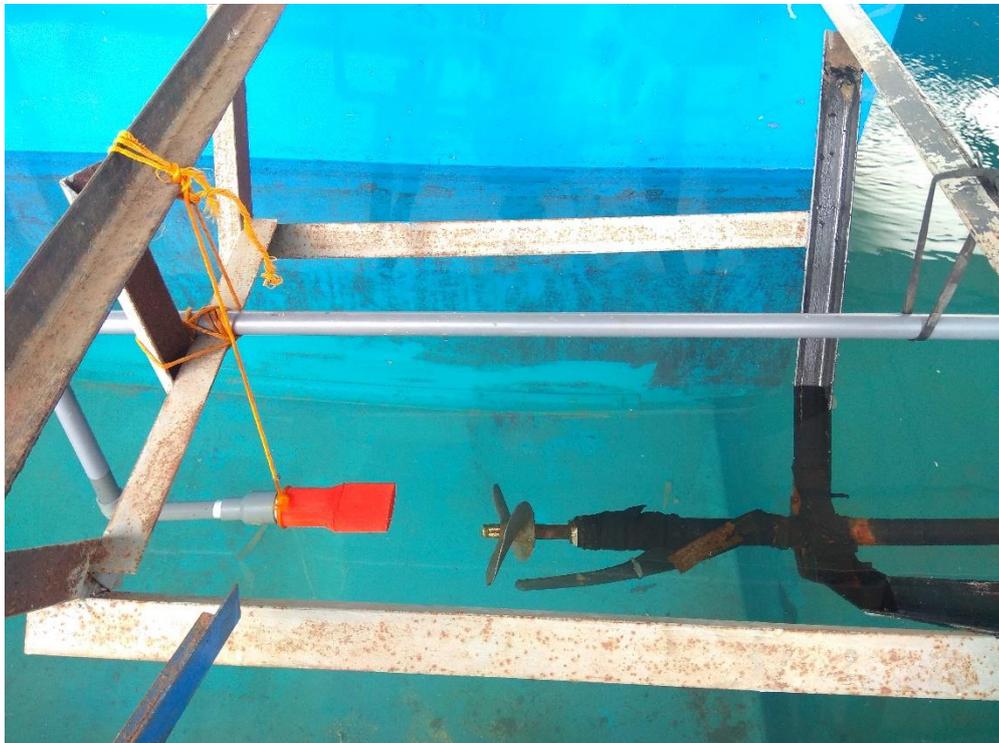
Force for Power Generation from Low Temperature Geothermal Resource". Proceeding World Geothermal Congress. Melbourne, Australia.
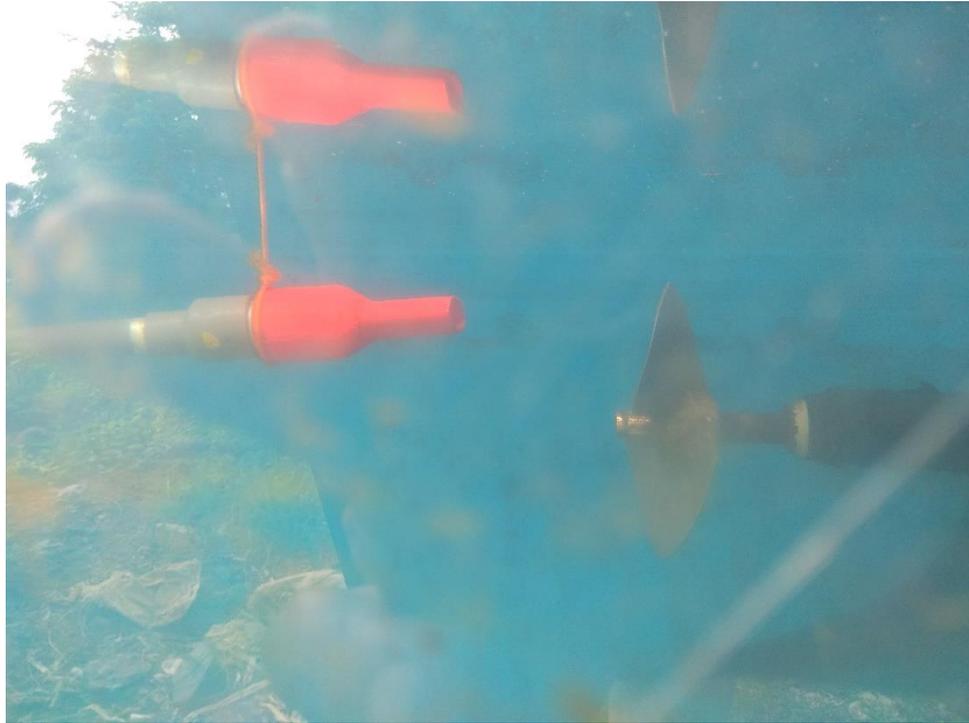
LAMPIRAN

Lampiran 1. Persiapan pengambilan data

Gambar 1. Perlengkapan pengambilan data

Gambar 2. Pemasangan alat pengujian pada 0,7R daun propeller tampak atas

Gambar 3. Pemasangan alat pengujian pada 0,7R daun propeller tampak samping

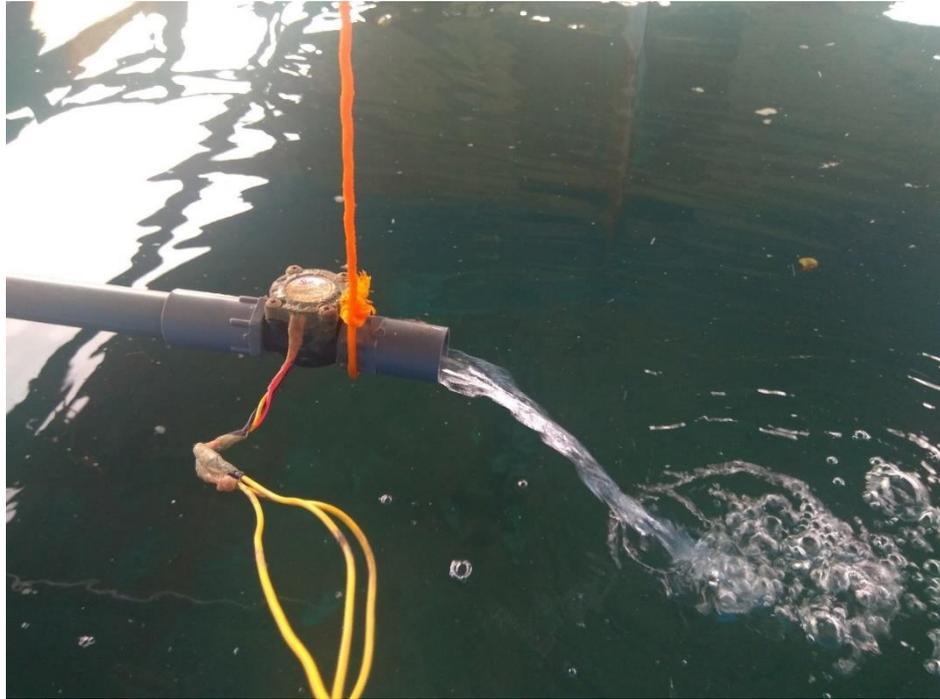Gambar 4. Pemasangan alat pengukuran dan disambungkan ke PC

Lampiran 2. Proses pengambilan data

Gambar 1. Pengukuran putaran mesin

Gambar 2. Proses pengujian nosel *inlet*

Gambar 3. Aliran air yang dihasilkan

Gambar 4. Pengukuran kecepatan aliran masuk

Gambar 5. Hasil pengukuran kecepatan aliran masuk

Lampiran 4. Tabel karakteristik fisik fluida air

Physical properties of water (SI units)

Temperature T (°C)	Specific Weight γ (kN/m³)	Density[a] ρ (kg/m³)	Dynamic Viscosity[b] μ (× 10⁻³ kg/m·s)	Kinematic Viscosity ν (× 10⁻⁶ m²/s)	Surface Tension[c] σ (N/m)	Modulus of Elasticity[a] E (× 10⁹ N/m²)	Vapor Pressure P_v (kN/m²)
0	9.805	999.8	1.781	1.785	0.0765	1.98	0.61
5	9.807	1000.0	1.518	1.519	0.0749	2.05	0.87
10	9.804	999.7	1.307	1.306	0.0742	2.10	1.23
15	9.798	999.1	1.139	1.139	0.0735	2.15	1.70
20	9.789	998.2	1.002	1.003	0.0728	2.17	2.34
25	9.777	997.0	0.890	0.893	0.0720	2.22	3.17
30	9.764	995.7	0.798	0.800	0.0712	2.25	4.24
40	9.730	992.2	0.653	0.658	0.0696	2.28	7.38
50	9.689	988.0	0.547	0.553	0.0679	2.29	12.33
60	9.642	983.2	0.466	0.474	0.0662	2.28	19.92
70	9.589	977.8	0.404	0.413	0.0644	2.25	31.16
80	9.530	971.8	0.354	0.364	0.0626	2.20	47.34
90	9.466	965.3	0.315	0.326	0.0608	2.14	70.10
100	9.399	958.4	0.282	0.294	0.0589	2.07	101.33

Source: Adapted from J. K. Venard and R. L. Street (1975). *Elementary Fluid Mechanics*, 5th ed., Wiley, New York.
[a]At atmospheric pressure.
[b]Dynamic viscosity can also be expressed in units of N·s/m².
[c]In contact with air.

Gambar 1. Tabel karakteristik fisik fluida air

Lampiran 5. Perhitungan koefisien gesek fluida (f)

Penentuan koefisien gesek fluida dilihat dari karakteristik jenis aliran fluida berdasarkan bilangan *Reynold* (Re), maka :

$$Re = \frac{V \cdot D}{v}$$

dimana :

Re = Bilangan *Reynold*
v = Kecepatan rata-rata aliran (m/s)
D = Diameter pipa (m)
v = Viskositas kinematik (m^2/s)

$$Re = \frac{0{,}56 \cdot 0{,}0127}{0{,}895 \cdot 10^{-6}}$$

$$Re = 7910{,}83$$

Karena nilai Re > 4000, maka aliran fluida bersifat turbulen. Jadi nilai koefisien gesek fluida (f) adalah :

$$f = \frac{0{,}316}{Re^{0{,}25}}$$

$$f = \frac{0{,}316}{7910{,}83^{0{,}25}}$$

$$f = 0{,}0335$$

Lampiran 6. Perhitungan koefisien kekasaran

Tabel 1. Nilai kekasaran (k) dalam mm untuk erbagai jenis pipa

No	Material Pipa	halus	Rata2	Kasar
1.	Gelas	0	0.003	0.006
2.	Baja halus, PVC, AC	0.015	0.03	0.06
3.	Baja biasa	0.03	0.06	0.15
4.	Galvanis	0.06	0.15	0.3
5.	Besi, pipa lining semen	0.15	0.3	0.6
6.	Beton	0.3	0.6	1.5
7.	Baja kasar	1.5	3	6
8.	Water mains	6.0	15	30
9.	Batu yg tak dilining, tanah	60	150	300

(sumber: *Pipeflow Analysis, Stepenshon*)

Gambar 1. Nilai kekasaran relatif jenis pipa

Rumus menghitung nilai kekasaran pada pipa :

$$K = \frac{f}{D}$$

Dimana :

k = Koefisien kekasaran

f = Kekasaran relatif pipa (mm)   (tabel nilai kekasaran)

D = Diameter pipa (m)

$$K = \frac{f}{D}$$

$$K = \frac{0{,}000015 \, m}{0{,}0127 \, m}$$

$$K = 0{,}0012$$

Lampiran 7. Data loger hasil pengukuran *flowmeter sensor* tiap kasus

1. Kasus 1

RPM 900	RPM 1100	RPM 1300	RPM 1500
14:37:00.190 -> Flow =3.20	10:49:30.162 -> Flow =0.08	15:25:02.575 -> Flow =0.24	16:11:09.777 -> Flow =2.12
14:37:01.175 -> Flow =3.20	10:49:31.193 -> Flow =0.70	15:25:03.560 -> Flow =0.48	16:11:10.761 -> Flow =2.24
14:37:02.206 -> Flow =3.20	10:49:32.178 -> Flow =4.00	15:25:04.591 -> Flow =0.24	16:11:11.792 -> Flow =6.08
14:37:03.191 -> Flow =3.20	10:49:33.209 -> Flow =4.00	15:25:05.575 -> Flow =5.52	16:11:12.767 -> Flow =3.48
14:37:04.175 -> Flow =4.56	10:49:34.194 -> Flow =2.00	15:25:06.560 -> Flow =6.12	16:11:13.761 -> Flow =8.92
14:37:05.206 -> Flow =4.56	10:49:35.178 -> Flow =1.32	15:25:07.591 -> Flow =9.40	16:11:18.793 -> Flow =8.32
14:37:06.191 -> Flow =7.56	Flow =0.26	15:25:08.576 -> Flow =9.40	16:11:15.753 -> Flow =9.96
14:37:07.175 -> Flow =7.00	10:49:37.194 -> Flow =3.88	15:25:09.560 -> Flow =9.08	16:11:16.762 -> Flow =9.89
14:37:08.207 -> Flow =7.20	10:49:38.179 -> Flow =2.65	15:25:10.592 -> Flow =9.20	16:11:17.799 -> Flow =8.08
14:37:09.191 -> Flow =7.48	10:49:39.163 -> Flow =6.28	15:25:11.586 -> Flow =9.08	16:11:18.778 -> Flow =9.96
14:37:10.176 -> Flow =7.00	10:49:40.194 -> Flow =8.24	15:25:12.561 -> Flow =9.20	16:11:19.762 -> Flow =8.20
14:37:11.207 -> Flow =7.20	10:49:41.179 -> Flow =8.56	15:25:13.592 -> Flow =9.20	16:11:20.799 -> Flow =9.96
14:37:12.192 -> Flow =7.23	10:49:42.210 -> Flow =8.32	15:25:19.576 -> Flow =9.32	16:11:21.778 -> Flow =4.08
14:37:13.176 -> Flow =7.48	10:49:43.195 -> Flow =8.66	15:25:15.561 -> Flow =9.32	16:11:22.762 -> Flow =9.08
14:37:14.207 -> Flow =7.48	10:49:44.179 -> Flow =8.45	15:25:16.592 -> Flow =9.20	16:11:21.799 -> Flow =10.89
14:37:15.192 -> Flow =7.48	10:49:45.164 -> Flow =8.70	15:25:17.577 -> Flow =9.20	16:11:24.778 -> Flow =10.72
14:37:16.176 -> Flow =7.88	10:49:46.195 -> Flow =8.44	15:25:18.561 -> Flow =9.20	16:11:25.762 -> Flow =10.60
14:37:17.208 -> Flow =7.88	10:49:47.180 -> Flow =8.26	15:25:19.592 -> Flow =9.20	16:11:26.794 -> Flow =10.36
14:37:18.192 -> Flow =7.48	10:49:48.164 -> Flow =8.46	15:25:20.577 -> Flow =8.20	16:11:27.778 -> Flow =11.12
18:37:19.177 -> Flow =7.30	10:49:49.195 -> Flow =8.46	15:25:21.561 -> Flow =8.32	16:11:28.763 -> Flow =11.12
14:37:20.208 -> Flow =7.62	10:49:50.180 -> Flow =8.44	15:25:22.593 -> Flow =8.20	16:11:29.794 -> Flow =11.52
14:37:21.193 -> Flow =7.86	Flow =8.67	15:25:23.577 -> Flow =8.32	16:11:30.785 -> Flow =11.16
14:37:22.177 -> Flow =8.00	10:49:52.196 -> Flow =8.70	15:25:28.562 -> Flow =8.88	16:11:31.763 -> Flow =10.44
14:37:23.208 -> Flow =8.48	10:49:53.180 -> Flow =8.78	15:25:25.593 -> Flow =6.32	16:11:32.795 -> Flow =10.68
14:37:24.193 -> Flow =8.20	10:49:54.164 -> Flow =8.46	15:25:26.578 -> Flow =6.20	16:11:33.759 -> Flow =10.44
Flow =7.00	10:49:55.196 -> Flow =8.46	15:25:27.562 -> Flow =6.08	16:11:34.764 -> Flow =10.56
14:37:26.209 -> Flow =7.48	10:49:56.180 -> Flow =8.46	15:25:28.593 -> Flow =6.20	16:11:35.795 -> Flow =11.08
14:37:27.193 -> Flow =7.48	10:49:57.212 -> Flow =8.46	15:25:29.578 -> Flow =6.20	16:11:36.779 -> Flow =10.24
14:37:28.178 -> Flow =7.48	10:49:58.196 -> Flow =8.40	15:25:30.562 -> Flow =6.12	16:11:37.764 -> Flow =10.00
14:37:29.209 -> Flow =7.98	10:49:59.181 -> Flow =8.00	15:25:31.599 -> Flow =6.80	16:11:38.795 -> Flow =10.00
14:37:30.193 -> Flow =7.48	Flow =8.20	15:25:32.578 -> Flow =7.12	16:11:39.780 -> Flow =10.00
14:37:31.178 -> Flow =7.98	10:50:01.197 -> Flow =8.45	15:25:33.569 -> Flow =9.24	16:11:40.764 -> Flow =10.36
14:37:32.209 -> Flow =7.48	10:50:02.181 -> Flow =8.46	15:25:34.594 -> Flow =9.96	16:11:41.164 -> Flow =9.36
14:37:33.194 -> Flow =7.48	10:50:03.212 -> Flow =8.75	15:25:35.579 -> Flow =9.48	16:11:42.545 -> Flow =9.36
Flow =7.48	10:50:04.197 -> Flow =8.70	15:25:36.569 -> Flow =9.96	16:11:43.214 -> Flow =7.36
14:37:35.210 -> Flow =7.48	10:50:05.181 -> Flow =7.66	15:25:37.594 -> Flow =9.24	16:11:44.648 -> Flow =9.54
14:37:36.194 -> Flow =7.48	10:50:06.213 -> Flow =7.58	15:25:38.579 -> Flow =9.24	16:11:45.254 -> Flow =10.36
14:37:37.179 -> Flow =7.48	10:50:07.197 -> Flow =7.00	15:25:39.561 -> Flow =10.84	16:11:46.564 -> Flow =10.36
14:37:38.210 -> Flow =7.48	10:50:08.182 -> Flow =8.46	15:25:40.595 -> Flow =10.08	16:11:47.595 -> Flow =10.36
14:37:39.194 -> Flow =7.66	Flow =8.46	15:25:41.579 -> Flow =10.08	16:11:48.180 -> Flow =10.36
14:37:40.226 -> Flow =7.86	10:50:10.198 -> Flow =8.90	15:25:42.561 -> Flow =10.32	16:11:49.168 -> Flow =10.36

14:37:41.210 -> Flow =7.00	10:50:11.182 -> Flow =8.78	15:25:43.595 -> Flow =10.20	16:11:50.214 -> Flow =10.36
14:37:42.195 -> Flow =6.92	10:50:12.213 -> Flow =8.72	15:25:44.580 -> Flow =8.96	16:11:51.374 -> Flow =10.40
Flow =6.86	10:50:18.198 -> Flow =8.72	15:25:45.564 -> Flow =4.08	16:11:52.383 -> Flow =10.55
14:37:44.211 -> Flow =6.67	10:50:14.182 -> Flow =8.44	15:25:46.595 -> Flow =8.96	16:11:53.324 -> Flow =4.12
14:37:45.195 -> Flow =6.44	10:50:15.214 -> Flow =8.46	15:25:87.580 -> Flow =8.32	16:11:54.432 -> Flow =4.12
14:37:46.226 -> Flow =6.00	10:50:16.198 -> Flow =8.80	15:25:88.568 -> Flow =8.08	16:11:55.631 -> Flow =4.12
14:37:47.211 -> Flow =5.64	10:50:17.183 -> Flow =6.60	15:25:49.596 -> Flow =4.20	16:11:56.347 -> Flow =6.40
14:37:48.195 -> Flow =5.00	10:50:18.214 -> Flow =6.42	15:25:50.580 -> Flow =4.20	16:11:57.134 -> Flow =6.40
14:37:49.227 -> Flow =5.00	10:50:19.199 -> Flow =6.00	15:25:51.565 -> Flow =4.08	16:11:58.174 -> Flow =6.40
14:37:50.211 -> Flow =5.20	10:50:20.183 -> Flow =3.40	15:25:52.596 -> Flow =3.96	16:11:59.287 -> Flow =10.27
14:37:51.196 -> Flow =5.60	10:50:21.214 -> Flow =4.20	15:25:53.580 -> Flow =4.08	16:11:00.224 -> Flow =10.27
Flow =4.24	10:50:22.199 -> Flow =3.20	Flow =3.96	16:12:01.264 -> Flow =9.12
14:37:53.212 -> Flow =2.24	10:50:23.183 -> Flow =0.54	15:25:55.596 -> Flow =4.44	16:12:02.363 -> Flow =8.60
14:37:54.196 -> Flow =2.00	Flow =1.00	15:25:56.581 -> Flow =4.32	16:12:03.392 -> Flow =8.10
14:37:55.227 -> Flow =1.92	10:50:25.199 -> Flow =2.24	15:25:57.565 -> Flow =4.08	16:12:04.272 -> Flow =8.10

2. Kasus 2

RPM 900	RPM 1100	RPM 1300	RPM 1500
16:03:11.927 -> Flow =3.36	16:11:09.777 -> Flow =0.12	0.00.00	12:20:54.018 -> Flow =3.60
16:03:12.958 -> Flow =3.48	16:11:10.761 -> Flow =6.78	12:12:43.140 -> Flow =0.00	12:20:55.003 -> Flow =6.60
16:03:13.943 -> Flow =8.84	16:11:11.792 -> Flow =6.00	12:12:44.156 -> Flow =2.00	12:20:56.034 -> Flow =7.80
16:03:14.927 -> Flow =8.72	16:11:12.767 -> Flow =6.48	12:12:45.125 -> Flow =1.44	12:20:57.019 -> Flow =6.75
16:03:15.959 -> Flow =7.48	16:11:13.761 -> Flow =7.92	12:12:46.156 -> Flow =2.88	12:20:58.003 -> Flow =6.45
16:03:16.943 -> Flow =6.08	16:11:14.793 -> Flow =7.32	12:12:47.141 -> Flow =2.76	12:20:59.035 -> Flow =10.60
16:03:17.928 -> Flow =3.84	16:11:15.781 -> Flow =8.96	12:12:48.125 -> Flow =10.52	12:21:00.019 -> Flow =8.75
16:03:18.959 -> Flow =7.20	16:11:16.762 -> Flow =8.84	12:12:49.156 -> Flow =10.52	12:21:01.004 -> Flow =11.45
16:03:19.977 -> Flow =7.32	16:11:17.793 -> Flow =8.08	12:12:50.141 -> Flow =10.52	12:21:02.035 -> Flow =11.70
16:03:20.928 -> Flow =7.32	16:11:18.708 -> Flow =8.96	12:12:51.125 -> Flow =10.64	12:21:03.019 -> Flow =11.40
16:03:21.959 -> Flow =7.20	16:11:19.762 -> Flow =8.20	12:12:52.157 -> Flow =10.00	12:21:04.004 -> Flow =11.30
16:03:22.944 -> Flow =4.44	16:11:20.793 -> Flow =8.96	12:12:53.141 -> Flow =10.24	12:21:05.035 -> Flow =10.15
16:03:23.928 -> Flow =7.56	16:11:21.778 -> Flow =8.08	12:12:54.126 -> Flow =10.48	12:21:06.020 -> Flow =9.00
16:03:27.960 -> Flow =7.56	16:11:22.762 -> Flow =8.88	12:12:55.157 -> Flow =10.24	Flow =10.08
16:03:25.977 -> Flow =7.56	16:11:23.794 -> Flow =8.84	12:12:56.141 -> Flow =10.48	12:21:08.036 -> Flow =11.30
16:03:26.928 -> Flow =7.80	16:11:24.778 -> Flow =8.72	12:12:57.126 -> Flow =10.84	12:21:09.020 -> Flow =12.04
16:03:27.960 -> Flow =7.68	16:11:25.765 -> Flow =9.60	12:12:58.157 -> Flow =10.96	12:21:10.605 -> Flow =12.00
16:03:28.944 -> Flow =8.56	16:11:26.794 -> Flow =9.36	12:12:59.142 -> Flow =11.08	12:21:11.036 -> Flow =12.64
16:03:29.929 -> Flow =9.92	16:11:27.768 -> Flow =9.12	12:13:00.126 -> Flow =10.96	12:21:12.020 -> Flow =11.00
16:03:30.960 -> Flow =8.07	16:11:28.763 -> Flow =9.12	12:13:01.158 -> Flow =10.40	12:21:13.305 -> Flow =11.04
16:03:31.945 -> Flow =9.88	16:11:29.794 -> Flow =9.52	12:13:02.142 -> Flow =10.04	12:21:14.036 -> Flow =11.04
16:03:32.929 -> Flow =8.40	16:11:30.779 -> Flow =9.16	12:13:03.127 -> Flow =10.04	12:21:15.021 -> Flow =11.04
16:03:33.961 -> Flow =7.80	16:11:31.763 -> Flow =9.44	12:13:04.158 -> Flow =10.04	12:21:16.005 -> Flow =11.04

16:03:34.945 -> Flow =7.00	16:11:32.795 -> Flow =10.68	12:13:05.142 -> Flow =0.36	12:21:17.037 -> Flow =10.85
16:03:35.930 -> Flow =6.34	16:11:33.779 -> Flow =9.44	12:13:06.127 -> Flow =10.04	12:21:18.021 -> Flow =11.28
16:03:36.961 -> Flow =4.20	16:11:34.764 -> Flow =9.56	12:13:07.158 -> Flow =10.28	12:21:19.036 -> Flow =11.30
16:03:37.945 -> Flow =5.12	16:11:35.795 -> Flow =9.08	12:13:08.143 -> Flow =11.78	12:21:20.020 -> Flow =11.86
16:03:38.930 -> Flow =7.00	16:11:36.779 -> Flow =8.24	12:13:09.127 -> Flow =11.78	12:21:21.005 -> Flow =11.02
16:03:39.961 -> Flow =6.12	16:11:37.764 -> Flow =8.09	12:13:10.159 -> Flow =11.02	12:21:22.136 -> Flow =10.02
16:03:40.946 -> Flow =7.06	16:11:38.795 -> Flow =7.00	12:13:11.143 -> Flow =11.02	12:21:23.020 -> Flow =9.75
16:03:41.930 -> Flow =7.45	16:11:39.780 -> Flow =5.24	12:13:12.158 -> Flow =2.40	12:21:24.205 -> Flow =9.84
16:03:42.962 -> Flow =5.00	16:11:40.942 -> Flow =5.00	12:13:13.142 -> Flow =9.75	12:21:25.036 -> Flow =9.20
16:03:43.946 -> Flow =3.07	16:11:41.930 -> Flow =5.27	12:13:14.127 -> Flow =9.06	12:21:26.021 -> Flow =10.06
16:03:44.931 -> Flow =3.64	16:11:42.962 -> Flow =5.00	12:13:15.158 -> Flow =8.62	12:21:27.075 -> Flow =11.08
16:03:45.962 -> Flow =3.12	16:11:43.946 -> Flow =4.64	12:13:16.142 -> Flow =0.36	12:21:28.037 -> Flow =11.88
16:03:46.946 -> Flow =4.00	16:11:44.931 -> Flow =3.89	12:13:17.127 -> Flow =8.62	12:21:29.721 -> Flow =11.68
16:03:47.941 -> Flow =3.09	16:11:45.962 -> Flow =3.12	12:13:18.158 -> Flow =8.62	12:21:30.620 -> Flow =11.72
16:03:48.962 -> Flow =4.76	16:11:46.946 -> Flow =2.00	12:13:19.143 -> Flow =10.02	12:21:31.305 -> Flow =11.00
16:03:49.947 -> Flow =4.23	16:11:47.931 -> Flow =4.57	12:13:20.127 -> Flow =10.02	12:21:32.036 -> Flow =11.60
	16:11:48.957 -> Flow =4.76	12:13:21.159 -> Flow =10.02	12:21:33.021 -> Flow =11.80
	16:11:49.988 -> Flow =3.28	12:13:22.143 -> Flow =10.02	12:21:34.035 -> Flow =11.88

3. Kasus 3

RPM 900	RPM 1100	RPM 1300	RPM 1500
10:50:56.187 -> Flow =3.02	15:32:19.485 -> Flow =0.00	16:11:09.777 -> Flow =3.12	16:55:57.109 -> Flow =4.00
10:50:57.218 -> Flow =3.02	15:32:20.517 -> Flow =3.18	16:11:10.753 -> Flow =2.24	16:55:58.041 -> Flow =9.25
10:50:58.203 -> Flow =4.78	15:32:21.501 -> Flow =5.06	16:11:11.792 -> Flow =3.00	16:55:59.049 -> Flow =11.78
10:50:59.187 -> Flow =4.78	15:32:22.485 -> Flow =8.32	16:11:12.720 -> Flow =3.48	16:56:00.057 -> Flow =12.24
10:51:00.219 -> Flow =7.00	15:32:23.517 -> Flow =9.00	16:11:13.761 -> Flow =8.92	16:56:01.065 -> Flow =12.00
10:51:01.203 -> Flow =7.00	15:32:24.501 -> Flow =9.08	16:11:14.793 -> Flow =7.32	16:56:02.037 -> Flow =12.42
10:51:02.187 -> Flow =7.00	15:32:25.486 -> Flow =10.36	16:11:15.709 -> Flow =9.96	16:56:03.045 -> Flow =11.08
10:51:03.219 -> Flow =8.48	15:32:26.517 -> Flow =10.24	16:11:16.762 -> Flow =9.84	16:56:04.053 -> Flow =8.48
10:51:04.203 -> Flow =8.48	15:32:27.502 -> Flow =10.12	16:11:17.793 -> Flow =9.08	16:56:05.061 -> Flow =10.04
10:51:05.188 -> Flow =8.48	15:32:28.486 -> Flow =10.76	16:11:18.788 -> Flow =10.96	16:56:06.069 -> Flow =11.00
10:51:06.219 -> Flow =8.90	15:32:29.517 -> Flow =10.28	16:11:19.762 -> Flow =10.20	16:56:07.041 -> Flow =10.06
10:51:07.204 -> Flow =8.90	15:32:30.502 -> Flow =9.56	16:11:20.793 -> Flow =10.96	16:56:08.049 -> Flow =10.12
10:51:08.188 -> Flow =8.12	15:32:39.486 -> Flow =9.32	16:11:21.778 -> Flow =11.08	16:56:09.057 -> Flow =10.10
10:51:09.219 -> Flow =8.12	15:32:32.518 -> Flow =9.68	16:11:22.762 -> Flow =11.08	16:56:10.065 -> Flow =12.92
10:51:10.204 -> Flow =8.12	15:32:33.502 -> Flow =9.56	16:11:23.794 -> Flow =11.84	16:56:11.037 -> Flow =13.80
10:51:11.188 -> Flow =8.12	15:32:34.487 -> Flow =9.44	16:11:24.778 -> Flow =11.72	16:56:12.045 -> Flow =13.44
10:51:12.220 -> Flow =8.12	15:32:35.518 -> Flow =9.96	16:11:25.762 -> Flow =10.60	16:56:13.053 -> Flow =13.44
10:51:13.204 -> Flow =8.78	15:32:36.503 -> Flow =9.72	16:11:26.794 -> Flow =10.36	16:56:14.061 -> Flow =13.56
10:51:14.189 -> Flow =8.78	15:32:37.487 -> Flow =9.52	16:11:27.778 -> Flow =10.12	16:56:15.069 -> Flow =14.06

10:51:15.220 -> Flow =8.78	15:32:38.518 -> Flow =9.04	16:11:28.763 -> Flow =11.12	16:56:16.041 -> Flow =13.68
10:51:16.205 -> Flow =9.06	15:32:39.503 -> Flow =9.68	16:11:29.794 -> Flow =11.52	16:56:17.049 -> Flow =13.80
10:51:17.189 -> Flow =9.06	15:32:40.487 -> Flow =9.68	16:11:30.779 -> Flow =11.16	16:56:18.057 -> Flow =13.80
10:51:18.230 -> Flow =9.06	15:32:41.519 -> Flow =9.52	16:11:31.763 -> Flow =11.44	16:56:19.065 -> Flow =13.04
10:51:19.205 -> Flow =9.62	15:32:42.503 -> Flow =9.64	16:11:32.795 -> Flow =11.68	Flow =13.04
10:51:20.189 -> Flow =9.62	15:32:43.488 -> Flow =9.88	16:11:33.779 -> Flow =11.44	16:56:21.045 -> Flow =13.16
10:51:21.221 -> Flow =10.13	15:32:44.519 -> Flow =9.88	16:11:34.764 -> Flow =11.56	16:56:22.053 -> Flow =13.16
10:51:22.205 -> Flow =10.13	15:32:45.504 -> Flow =3.12	16:11:35.795 -> Flow =11.08	16:56:23.061 -> Flow =13.28
10:51:23.190 -> Flow =10.82	15:32:46.488 -> Flow =8.36	16:11:36.779 -> Flow =10.24	16:56:24.069 -> Flow =13.28
10:51:24.221 -> Flow =7.89	15:32:47.519 -> Flow =8.24	16:11:37.764 -> Flow =8.00	16:56:25.041 -> Flow =13.28
10:51:25.206 -> Flow =8.00	15:32:48.504 -> Flow =8.24	16:11:38.795 -> Flow =10.90	16:56:26.049 -> Flow =12.40
10:51:26.190 -> Flow =8.00	15:32:49.488 -> Flow =9.52	16:11:39.780 -> Flow =10.72	16:56:27.057 -> Flow =12.28
10:51:27.221 -> Flow =8.44	15:32:50.520 -> Flow =9.28	16:11:40.764 -> Flow =10.36	16:56:28.065 -> Flow =12.40
10:51:28.206 -> Flow =8.48	15:32:51.504 -> Flow =9.88	16:11:41.054 -> Flow =10.64	Flow =12.64
10:51:29.190 -> Flow =8.42	15:32:52.489 -> Flow =9.52	16:11:42.062 -> Flow =10.44	16:56:30.041 -> Flow =13.52
10:51:30.222 -> Flow =8.26	15:32:53.520 -> Flow =9.88	16:11:43.070 -> Flow =8.12	16:56:31.049 -> Flow =12.52
10:51:31.206 -> Flow =8.26	15:32:54.504 -> Flow =8.00	16:11:44.078 -> Flow =10.52	16:56:32.057 -> Flow =12.64
10:51:32.191 -> Flow =8.26	15:32:55.489 -> Flow =9.52	16:11:45.050 -> Flow =10.09	16:56:33.066 -> Flow =13.00
10:51:33.222 -> Flow =8.00	15:32:56.520 -> Flow =8.48	16:11:46.058 -> Flow =10.17	Flow =13.24
10:51:34.206 -> Flow =8.00	15:32:57.505 -> Flow =8.00	16:11:47.066 -> Flow =8.48	16:56:35.047 -> Flow =12.28
10:51:35.191 -> Flow =8.40	15:32:58.489 -> Flow =9.88	16:11:48.074 -> Flow =8.40	16:56:36.055 -> Flow =13.00
10:51:36.222 -> Flow =8.40	15:32:59.521 -> Flow =9.88	16:11:49.046 -> Flow =10.00	16:56:37.063 -> Flow =12.88
10:51:37.207 -> Flow =8.89	15:33:00.505 -> Flow =9.64	16:11:50.054 -> Flow =10.89	16:56:38.070 -> Flow =12.88
10:51:38.191 -> Flow =8.89	15:33:01.490 -> Flow =9.52	16:11:51.062 -> Flow =10.18	16:56:39.043 -> Flow =12.00
10:51:39.223 -> Flow =8.86	15:33:02.521 -> Flow =9.28	16:11:52.070 -> Flow =10.16	16:56:40.051 -> Flow =12.00
10:51:40.207 -> Flow =8.08	15:33:03.505 -> Flow =8.36	16:11:53.073 -> Flow =9.12	16:56:41.059 -> Flow =10.00
10:51:41.192 -> Flow =8.08	15:33:04.490 -> Flow =8.36	16:11:54.045 -> Flow =10.08	16:56:42.067 -> Flow =10.88
10:51:42.223 -> Flow =8.46	15:33:05.521 -> Flow =8.36	16:11:55.053 -> Flow =10.00	Flow =10.76
10:51:43.207 -> Flow =8.46	15:33:06.506 -> Flow =8.12	16:11:56.061 -> Flow =10.12	16:56:44.046 -> Flow =9.04
10:51:44.192 -> Flow =8.68	15:33:07.490 -> Flow =8.48	16:11:57.069 -> Flow =10.80	16:56:45.055 -> Flow =9.06
10:51:45.223 -> Flow =8.68	15:33:08.522 -> Flow =8.36	16:11:58.077 -> Flow =10.12	16:56:46.063 -> Flow =8.88
10:51:46.208 -> Flow =6.88	15:33:09.506 -> Flow =8.12	16:11:59.049 -> Flow =10.00	16:56:47.071 -> Flow =8.64
10:51:47.192 -> Flow =6.20	15:33:10.490 -> Flow =9.64	16:12:00.611 -> Flow =10.36	Flow =7.52
10:51:48.224 -> Flow =5.32	15:33:11.522 -> Flow =8.36	16:12:01.177 -> Flow =10.12	16:56:49.051 -> Flow =6.52
10:51:49.208 -> Flow =4.28	15:33:12.506 -> Flow =7.12	16:12:02.197 -> Flow =10.12	16:56:50.059 -> Flow =4.28
10:51:50.193 -> Flow =4.02	15:33:13.491 -> Flow =7.24	16:12:03.186 -> Flow =10.12	16:56:51.067 -> Flow =3.04
10:51:51.224 -> Flow =4.02	15:33:14.522 -> Flow =7.12	16:12:04.679 -> Flow =10.00	16:56:52.075 -> Flow =2.92
10:51:52.208 -> Flow =4.72	15:33:15.507 -> Flow =9.88	16:12:05.310 -> Flow =9.36	16:56:53.047 -> Flow =2.68
10:51:53.193 -> Flow =3.06	15:33:16.491 -> Flow =8.76	16:12:06.437 -> Flow =7.12	16:56:54.055 -> Flow =2.32
10:51:54.224 -> Flow =0.00	15:33:17.523 -> Flow =6.48	16:12:07.048 -> Flow =4.00	16:56:55.063 -> Flow =1.08
10:51:55.209 -> Flow =0.00	15:33:18.507 -> Flow =3.12	16:12:08.052 -> Flow =4.36	16:56:56.071 -> Flow =1.08

4. Kasus 4

RPM 900	RPM 1100	RPM 1300	RPM 1500
11:51:15.220 -> Flow =3.06	14:37:24.193 -> Flow =5.20	16:53:15.027 -> Flow =1.28	15:33:17.523 -> Flow =3.48
11:51:16.205 -> Flow =3.06	Flow =5.00	16:53:16.035 -> Flow =1.89	15:33:18.507 -> Flow =3.12
11:51:17.189 -> Flow =3.87	14:37:26.209 -> Flow =7.48	16:53:17.045 -> Flow =5.8	15:33:19.492 -> Flow =8.76
11:51:18.220 -> Flow =3.87	14:37:27.193 -> Flow =7.08	16:53:18.050 -> Flow =6.74	15:33:20.523 -> Flow =8.40
11:51:19.205 -> Flow =5.74	14:37:28.178 -> Flow =7.52	16:53:19.028 -> Flow =5.74	15:33:21.507 -> Flow =8.64
11:51:20.189 -> Flow =5.74	14:37:29.209 -> Flow =7.60	16:53:20.031 -> Flow =6.62	15:33:28.492 -> Flow =8.52
11:51:21.221 -> Flow =5.74	14:37:30.193 -> Flow =7.48	16:53:21.034 -> Flow =8.00	15:33:23.523 -> Flow =8.28
11:51:22.205 -> Flow =7.80	14:37:31.178 -> Flow =7.72	16:53:22.041 -> Flow =7.80	15:33:24.508 -> Flow =8.40
11:51:23.190 -> Flow =7.80	14:37:32.209 -> Flow =8.48	16:53:23.044 -> Flow =9.05	15:33:25.492 -> Flow =9.16
11:51:24.221 -> Flow =8.62	14:37:33.194 -> Flow =8.65	16:53:24.045 -> Flow =8.62	15:33:26.524 -> Flow =9.40
11:51:25.206 -> Flow =8.62	Flow =7.87	16:53:25.052 -> Flow =9.05	15:33:27.508 -> Flow =9.64
11:51:26.190 -> Flow =8.48	14:37:35.211 -> Flow =9.68	16:53:26.058 -> Flow =9.05	15:33:28.492 -> Flow =9.64
11:51:27.221 -> Flow =8.48	14:37:36.194 -> Flow =9.48	16:53:27.057 -> Flow =10.14	15:33:29.524 -> Flow =11.52
11:51:28.206 -> Flow =9.04	14:37:37.179 -> Flow =8.98	16:53:28.028 -> Flow =10.54	15:33:30.508 -> Flow =11.64
11:51:29.190 -> Flow =9.04	14:37:38.211 -> Flow =8.72	16:53:29.029 -> Flow =10.14	15:33:31.493 -> Flow =12.00
11:51:30.222 -> Flow =9.12	14:37:39.194 -> Flow =8.66	16:53:30.030 -> Flow =10.62	15:33:32.524 -> Flow =12.40
11:51:31.206 -> Flow =9.04	14:37:40.226 -> Flow =8.86	16:53:31.034 -> Flow =10.64	15:33:33.509 -> Flow =11.92
11:51:32.191 -> Flow =9.08	14:37:41.211 -> Flow =8.00	16:53:32.032 -> Flow =10.64	Flow =12.80
11:51:33.222 -> Flow =8.84	14:37:42.195 -> Flow =9.92	16:53:33.035 -> Flow =11.84	15:33:35.524 -> Flow =12.16
11:51:34.206 -> Flow =8.84	Flow =9.86	16:53:34.038 -> Flow =11.84	15:33:36.509 -> Flow =12.68
11:51:35.191 -> Flow =8.84	14:37:44.211 -> Flow =9.67	16:53:35.043 -> Flow =10.64	15:33:37.493 -> Flow =12.86
11:51:36.222 -> Flow =8.84	14:37:45.195 -> Flow =9.44	16:53:36.048 -> Flow =10.90	15:33:38.525 -> Flow =12.92
11:51:37.207 -> Flow =8.45	14:37:46.226 -> Flow =9.00	16:53:37.048 -> Flow =10.45	15:33:39.509 -> Flow =13.40
11:51:38.191 -> Flow =8.45	14:37:47.211 -> Flow =9.64	16:53:38.028 -> Flow =10.90	15:33:40.494 -> Flow =13.08
11:51:39.223 -> Flow =8.02	14:37:48.195 -> Flow =9.00	16:53:39.035 -> Flow =10.02	15:33:41.525 -> Flow =13.60
11:51:40.207 -> Flow =8.72	14:37:49.227 -> Flow =9.00	16:53:40.036 -> Flow =10.90	15:33:42.511 -> Flow =12.88
11:51:41.192 -> Flow =8.72	14:37:50.211 -> Flow =9.20	16:53:41.044 -> Flow =10.98	Flow =12.76
11:51:42.223 -> Flow =8.46	14:37:51.196 -> Flow =10.60	16:53:42.052 -> Flow =10.98	15:33:44.525 -> Flow =12.40
11:51:43.207 -> Flow =8.46	Flow =10.24	16:53:43.029 -> Flow =9.32	15:33:45.511 -> Flow =12.80
11:51:44.192 -> Flow =8.89	14:37:53.212 -> Flow =9.24	16:53:44.036 -> Flow =9.72	15:33:46.494 -> Flow =11.80
11:51:45.223 -> Flow =8.89	14:37:54.196 -> Flow =9.00	16:53:45.044 -> Flow =9.70	15:33:47.494 -> Flow =11.04
11:51:46.208 -> Flow =8.89	14:37:55.227 -> Flow =9.92	16:53:46.055 -> Flow =9.64	15:33:48.514 -> Flow =11.28
11:51:47.192 -> Flow =8.56	14:37:56.212 -> Flow =8.60	16:53:47.033 -> Flow =9.54	15:33:49.498 -> Flow =11.28
11:51:48.224 -> Flow =7.56	14:37:57.196 -> Flow =9.24	16:53:48.043 -> Flow =9.54	15:33:50.529 -> Flow =11.52
11:51:49.208 -> Flow =7.56	14:37:58.228 -> Flow =9.24	16:53:49.049 -> Flow =9.38	15:33:51.514 -> Flow =2.16
11:51:50.193 -> Flow =7.18	14:37:59.212 -> Flow =9.86	16:53:50.056 -> Flow =9.38	15:33:52.498 -> Flow =11.92
11:51:51.224 -> Flow =7.04	14:38:00.197 -> Flow =9.92	16:53:51.033 -> Flow =9.32	15:33:53.530 -> Flow =11.16
11:51:52.208 -> Flow =7.04	14:38:01.228 -> Flow =9.88	16:53:52.043 -> Flow =10.62	15:33:54.514 -> Flow =10.24

11:51:53.193 -> Flow =7.14	14:38:02.213 -> Flow =9.76	16:53:53.049 -> Flow =10.60	15:33:55.499 -> Flow =10.60
11:51:54.224 -> Flow =7.14	14:38:03.197 -> Flow =9.11	Flow =10.60	15:33:56.530 -> Flow =11.00
11:51:55.209 -> Flow =6.66	14:38:04.228 -> Flow =9.00	16:53:55.036 -> Flow =10.60	15:33:57.515 -> Flow =10.68
11:51:56.193 -> Flow =6.66	14:38:05.213 -> Flow =9.09	16:53:56.043 -> Flow =9.66	15:33:58.499 -> Flow =10.12
11:51:57.225 -> Flow =6.78	14:38:06.197 -> Flow =8.00	16:53:57.055 -> Flow =9.66	15:33:59.530 -> Flow =10.00
11:51:58.209 -> Flow =6.78	Flow =8.22	16:53:58.029 -> Flow =9.16	15:34:00.515 -> Flow =9.62
11:51:59.193 -> Flow =6.52	14:38:08.213 -> Flow =8.46	16:53:59.036 -> Flow =9.16	15:34:01.499 -> Flow =9.62
11:52:00.225 -> Flow =6.64	14:38:09.198 -> Flow =7.32	16:54:00.048 -> Flow =9.16	15:34:02.531 -> Flow =9.40
11:52:01.209 -> Flow =6.58	14:38:10.229 -> Flow =6.00	16:54:01.059 -> Flow =8.20	15:34:03.515 -> Flow =9.42
11:52:02.194 -> Flow =6.52	14:38:11.213 -> Flow =5.60	16:54:02.037 -> Flow =8.20	15:33:04.530 -> Flow =9.40
11:52:03.225 -> Flow =4.67	14:38:12.198 -> Flow =5.06	16:54:03.045 -> Flow =8.20	15:34:05.715 -> Flow =8.70
11:52:04.211 -> Flow =4.67	14:38:13.229 -> Flow =5.00	16:54:04.051 -> Flow =8.00	15:34:06.196 -> Flow =8.70
11:52:05.194 -> Flow =5.52	14:38:14.214 -> Flow =5.46	16:54:05.060 -> Flow =7.00	15:34:07.538 -> Flow =8.24
11:52:06.225 -> Flow =3.60	14:38:15.198 -> Flow =3.46	16:54:06.033 -> Flow =7.04	15:34:08.018 -> Flow =4.62
11:52:07.211 -> Flow =3.62	14:38:16.230 -> Flow =3.42	16:54:07.042 -> Flow =6.08	15:33:09.137 -> Flow =3.28
11:52:08.194 -> Flow =3.06	14:38:17.214 -> Flow =3.12	16:54:08.049 -> Flow =6.00	15:34:10.515 -> Flow =3.28
11:52:09.226 -> Flow =3.06	14:38:18.199 -> Flow =3.12	16:54:09.057 -> Flow =5.46	15:34:11.462 -> Flow =2.52
11:52:10.211 -> Flow =2.00	14:38:19.230 -> Flow =2.08	16:54:10.040 -> Flow =4.08	15:34:12.575 -> Flow =2.46
11:52:11.195 -> Flow =2.00	14:38:20.214 -> Flow =2.08	16:54:11.068 -> Flow =4.00	15:34:13.105 -> Flow =1.82
11:52:12.226 -> Flow =2.08	14:38:21.199 -> Flow =2.46	16:54:12.153 -> Flow =3.46	
11:52:13.211 -> Flow =0.00			

5. Kasus 5

RPM 900	RPM 1100	RPM 1300	RPM 1500
09:50:57.218 -> Flow =0.00	10:50:57.218 -> Flow =1.06	16:51:25.077 -> Flow =2.00	16:56:00.032 -> Flow =2.12
09:50:58.273 -> Flow =1.00	10:50:58.203 -> Flow =2.00	16:51:26.051 -> Flow =1.80	16:56:01.035 -> Flow =2.60
09:50:59.187 -> Flow =1.08	10:50:59.187 -> Flow =3.00	16:51:27.039 -> Flow =3.80	16:56:02.044 -> Flow =2.67
09:51:00.219 -> Flow =2.12	10:51:00.219 -> Flow =4.24	16:51:28.042 -> Flow =3.80	16:56:03.048 -> Flow =4.80
09:51:01.203 -> Flow =2.12	10:51:01.203 -> Flow =4.60	16:51:29.027 -> Flow =5.76	16:56:04.048 -> Flow =4.80
09:51:02.187 -> Flow =4.18	10:51:02.187 -> Flow =4.18	16:51:30.054 -> Flow =5.76	Flow =5.65
09:51:03.219 -> Flow =4.18	10:51:03.219 -> Flow =4.36	16:51:31.021 -> Flow =5.76	16:56:06.033 -> Flow =7.68
09:51:04.203 -> Flow =4.60	10:51:04.203 -> Flow =6.70	16:51:32.030 -> Flow =6.00	16:56:07.036 -> Flow =7.68
09:51:05.148 -> Flow =4.60	10:51:05.188 -> Flow =6.70	16:51:33.036 -> Flow =6.00	16:56:08.040 -> Flow =8.90
09:51:06.219 -> Flow =6.18	10:51:06.219 -> Flow =7.80	16:51:34.037 -> Flow =8.70	16:56:09.047 -> Flow =8.98
09:51:07.201 -> Flow =6.18	10:51:07.204 -> Flow =7.80	16:51:35.016 -> Flow =8.00	16:56:10.025 -> Flow =8.98
09:51:08.188 -> Flow =6.64	10:51:08.188 -> Flow =7.92	16:51:36.021 -> Flow =8.00	16:56:11.030 -> Flow =9.12
09:51:09.219 -> Flow =6.64	10:51:09.219 -> Flow =7.92	16:51:37.027 -> Flow =8.60	16:56:12.033 -> Flow =9.12
09:51:09.264 -> Flow =6.80	10:51:10.204 -> Flow =9.02	16:51:38.036 -> Flow =9.66	16:56:13.039 -> Flow =10.04
09:51:11.188 -> Flow =7.80	10:51:11.188 -> Flow =9.02	16:51:39.041 -> Flow =8.60	16:56:14.048 -> Flow =10.04
09:51:12.220 -> Flow =7.06	10:51:12.220 -> Flow =9.02	16:51:40.016 -> Flow =9.84	16:56:15.027 -> Flow =10.72
09:51:13.204 -> Flow =7.72	10:51:13.204 -> Flow =9.16	16:51:41.015 -> Flow =9.06	16:56:16.035 -> Flow =10.72
09:51:14.189 -> Flow =7.72	10:51:14.189 -> Flow =9.40	16:51:42.033 -> Flow =9.18	16:56:17.045 -> Flow =10.72

09:51:15.220 -> Flow =7.82
09:51:16.205 -> Flow =7.82
09:51:17.189 -> Flow =8.02
09:51:18.220 -> Flow =7.89
09:51:19.205 -> Flow =7.89
09:51:20.189 -> Flow =8.08
09:51:21.221 -> Flow =8.08
09:51:22.205 -> Flow =8.08
09:51:23.190 -> Flow =8.15
09:51:24.221 -> Flow =8.18
09:51:25.206 -> Flow =8.02
09:51:26.190 -> Flow =8.20
09:51:27.221 -> Flow =8.20
09:51:28.206 -> Flow =8.20
09:51:29.190 -> Flow =8.26
09:51:30.222 -> Flow =8.28
09:51:31.206 -> Flow =8.28
09:51:32.191 -> Flow =7.40
09:51:33.222 -> Flow =7.40
09:51:34.206 -> Flow =7.40
09:51:35.191 -> Flow =8.00
09:51:36.222 -> Flow =7.00
09:51:37.207 -> Flow =7.02
09:51:38.191 -> Flow =7.02
09:51:39.223 -> Flow =7.18
09:51:40.207 -> Flow =7.76
09:51:41.192 -> Flow =7.76
09:51:42.223 -> Flow =6.76
09:51:43.207 -> Flow =7.00
09:51:44.192 -> Flow =7.08
09:51:45.223 -> Flow =7.08
09:51:46.208 -> Flow =6.80
09:51:47.192 -> Flow =6.80
09:51:48.224 -> Flow =6.80
09:51:49.268 -> Flow =5.78
09:51:50.193 -> Flow =6.02
09:51:51.219 -> Flow =6.00
09:51:52.208 -> Flow =5.84
09:51:53.183 -> Flow =4.80
09:51:54.224 -> Flow =4.40
09:51:55.209 -> Flow =4.36
09:51:56.193 -> Flow =4.36

10:51:15.220 -> Flow =9.40
10:51:16.205 -> Flow =9.40
10:51:17.189 -> Flow =9.40
10:51:18.220 -> Flow =8.82
10:51:19.205 -> Flow =8.82
10:51:20.189 -> Flow =8.82
10:51:21.221 -> Flow =8.82
10:51:22.205 -> Flow =8.82
10:51:23.190 -> Flow =8.82
10:51:24.221 -> Flow =8.82
10:51:25.206 -> Flow =8.20
10:51:26.190 -> Flow =8.26
10:51:27.221 -> Flow =8.26
10:51:28.206 -> Flow =8.26
10:51:29.190 -> Flow =8.26
10:51:30.222 -> Flow =8.10
10:51:31.206 -> Flow =8.10
10:51:32.191 -> Flow =8.10
10:51:33.222 -> Flow =8.18
10:51:34.206 -> Flow =8.18
10:51:35.191 -> Flow =8.18
10:51:36.222 -> Flow =8.00
10:51:37.207 -> Flow =8.00
10:51:38.191 -> Flow =8.08
10:51:39.223 -> Flow =8.08
10:51:40.207 -> Flow =8.08
10:51:41.192 -> Flow =8.08
10:51:42.223 -> Flow =8.08
10:51:43.207 -> Flow =8.08
10:51:44.192 -> Flow =8.80
10:51:45.223 -> Flow =8.80
10:51:46.207 -> Flow =8.66
10:51:47.192 -> Flow =8.66
10:51:48.224 -> Flow =8.04
10:51:49.208 -> Flow =8.04
10:51:50.198 -> Flow =5.56
10:51:51.224 -> Flow =5.56
10:51:52.208 -> Flow =3.56
10:51:53.193 -> Flow =3.12
10:51:54.224 -> Flow =3.12
10:51:55.255 -> Flow =3.12
10:51:56.193 -> Flow =2.06
10:51:57.225 -> Flow =2.00
10:51:58.209 -> Flow =1.80

16:51:43.041 -> Flow =9.48
16:51:44.011 -> Flow =9.48
16:51:45.022 -> Flow =9.74
16:51:46.035 -> Flow =9.74
16:51:47.042 -> Flow =10.06
16:51:48.020 -> Flow =10.45
16:51:49.029 -> Flow =10.05
16:51:50.038 -> Flow =10.20
Flow =10.25
16:51:52.027 -> Flow =10.30
16:51:53.037 -> Flow =10.80
16:51:54.043 -> Flow =10.12
Flow =10.12
16:51:56.016 -> Flow =10.48
16:51:57.025 -> Flow =9.89
16:51:58.032 -> Flow =9.56
16:51:59.041 -> Flow =9.56
16:52:00.017 -> Flow =9.56
16:52:01.028 -> Flow =9.56
16:52:02.041 -> Flow =9.40
16:52:03.017 -> Flow =9.40
16:52:04.022 -> Flow =9.60
16:52:05.035 -> Flow =9.20
16:52:06.042 -> Flow =9.20
16:52:07.046 -> Flow =9.20
16:52:08.023 -> Flow =9.20
16:52:09.033 -> Flow =9.20
16:52:10.041 -> Flow =9.20
16:52:11.024 -> Flow =9.20
16:52:12.028 -> Flow =9.24
16:52:13.040 -> Flow =9.24
16:52:14.018 -> Flow =9.00
16:52:15.023 -> Flow =9.24
16:52:16.027 -> Flow =9.24
16:52:17.033 -> Flow =9.24
16:52:18.033 -> Flow =9.24
16:52:19.036 -> Flow =9.24
16:52:20.037 -> Flow =8.65
16:52:21.041 -> Flow =8.65
16:52:22.067 -> Flow =8.14
16:52:23.042 -> Flow =8.14

16:56:18.050 -> Flow =10.72
16:56:19.028 -> Flow =10.72
16:56:20.031 -> Flow =10.80
16:56:21.034 -> Flow =10.80
16:56:22.041 -> Flow =10.92
16:56:23.044 -> Flow =10.92
16:56:24.045 -> Flow =10.92
16:56:25.052 -> Flow =10.92
16:56:26.058 -> Flow =10.92
16:56:27.057 -> Flow =11.12
16:56:28.028 -> Flow =11.12
16:56:29.029 -> Flow =11.12
16:56:30.030 -> Flow =11.12
16:56:31.034 -> Flow =11.08
16:56:32.032 -> Flow =10.54
16:56:33.035 -> Flow =10.54
16:56:34.038 -> Flow =10.54
16:56:35.043 -> Flow =10.54
16:56:36.048 -> Flow =9.75
16:56:37.048 -> Flow =9.40
16:56:38.028 -> Flow =9.75
16:56:39.035 -> Flow =10.68
16:56:40.036 -> Flow =10.68
16:56:41.044 -> Flow =10.68
16:56:42.052 -> Flow =10.68
16:56:43.029 -> Flow =10.68
16:56:44.036 -> Flow =10.20
16:56:45.044 -> Flow =10.20
16:56:46.055 -> Flow =10.26
16:56:47.033 -> Flow =10.26
16:56:48.043 -> Flow =10.00
16:56:49.049 -> Flow =9.84
16:56:50.056 -> Flow =9.84
16:56:51.033 -> Flow =8.44
16:56:52.043 -> Flow =8.44
16:56:53.049 -> Flow =8.02
Flow =8.02
16:56:55.036 -> Flow =8.02
16:56:56.043 -> Flow =7.64
16:56:57.055 -> Flow =7.64
16:56:58.029 -> Flow =6.54
16:56:59.036 -> Flow =6.54
16:57:00.048 -> Flow =6.02