

LAMPIRAN 1

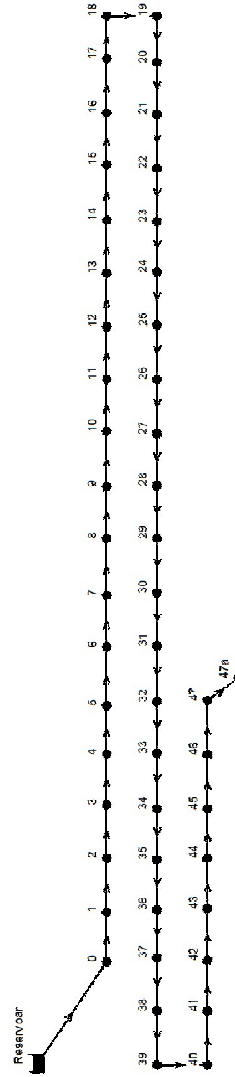
ANALISIS EPANET

PADA PENGEMBANGAN TAHAP I

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

Day 1, 12:00 AM



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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                 *
*                               Analysis for Pipe Networks                   *
*                               Version 2.0                                 *
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Input File: final 5.NET

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
0	Reservoar	0	1	700

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
1	0.00	735.03	4.70	0.00
2	0.00	735.03	4.71	0.00
3	0.00	735.02	6.86	0.00
4	0.00	735.02	9.25	0.00
5	0.00	735.01	10.74	0.00
6	0.00	735.01	14.55	0.00
7	0.00	735.00	17.92	0.00
8	0.00	735.00	18.77	0.00
9	0.00	735.00	18.32	0.00
10	0.00	735.00	16.46	0.00
11	0.00	734.99	16.23	0.00
12	0.00	734.98	20.37	0.00
13	0.00	734.98	26.46	0.00
14	0.00	734.97	25.52	0.00
15	0.00	734.97	21.85	0.00
16	0.00	734.96	20.17	0.00
17	0.00	734.96	20.65	0.00
18	0.00	734.96	21.06	0.00
19	0.00	734.95	20.80	0.00
20	0.00	734.94	21.97	0.00
21	0.00	734.94	23.54	0.00
22	0.00	734.93	27.33	0.00
23	0.00	734.93	30.59	0.00
24	0.00	734.92	34.33	0.00
25	0.00	734.91	33.19	0.00
26	0.00	734.90	31.08	0.00
27	0.00	734.90	31.10	0.00
28	0.00	734.90	34.49	0.00
29	0.00	734.89	35.33	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
30	0.00	734.88	36.73	0.00
31	0.00	734.88	35.37	0.00
32	0.00	734.87	34.00	0.00
33	0.00	734.86	35.36	0.00
34	0.00	734.86	34.67	0.00
35	0.00	734.85	35.49	0.00
36	0.00	734.85	36.37	0.00
37	0.00	734.84	36.32	0.00
38	0.00	734.83	41.66	0.00
39	0.00	734.82	41.66	0.00
40	0.00	734.81	39.62	0.00
41	0.00	734.81	41.34	0.00
42	0.00	734.80	40.44	0.00
43	0.00	734.79	46.70	0.00
44	0.00	734.79	47.66	0.00
45	0.00	734.78	47.65	0.00
46	0.00	734.78	45.31	0.00
47	0.00	734.77	43.31	0.00
0	0.00	735.04	0.18	0.00
47a	100.00	734.77	43.31	0.00
Reservoir	-100.00	735.04	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	100.00	0.26	0.09	Open
2	100.00	0.26	0.09	Open
3	100.00	0.26	0.09	Open
4	100.00	0.26	0.09	Open
5	100.00	0.26	0.09	Open
6	100.00	0.26	0.09	Open
7	100.00	0.26	0.09	Open
8	100.00	0.26	0.09	Open
9	100.00	0.26	0.09	Open
10	100.00	0.26	0.09	Open
11	100.00	0.26	0.09	Open
12	100.00	0.26	0.09	Open
13	100.00	0.26	0.09	Open
14	100.00	0.26	0.09	Open
15	100.00	0.26	0.09	Open
16	100.00	0.26	0.09	Open
17	100.00	0.26	0.09	Open
18	100.00	0.26	0.09	Open
19	100.00	0.26	0.09	Open
20	100.00	0.26	0.09	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
21	100.00	0.26	0.09	Open
22	100.00	0.26	0.09	Open
23	100.00	0.26	0.09	Open
24	100.00	0.26	0.09	Open
25	100.00	0.26	0.09	Open
26	100.00	0.26	0.09	Open
27	100.00	0.26	0.09	Open
28	100.00	0.26	0.09	Open
29	100.00	0.26	0.09	Open
30	100.00	0.26	0.09	Open
31	100.00	0.26	0.09	Open
32	100.00	0.26	0.09	Open
33	100.00	0.26	0.09	Open
34	100.00	0.26	0.09	Open
35	100.00	0.26	0.09	Open
36	100.00	0.26	0.09	Open
37	100.00	0.26	0.09	Open
38	100.00	0.26	0.09	Open
39	100.00	0.26	0.09	Open
40	100.00	0.26	0.09	Open
41	100.00	0.26	0.09	Open
42	100.00	0.26	0.09	Open
43	100.00	0.26	0.09	Open
44	100.00	0.26	0.09	Open
45	100.00	0.26	0.09	Open
46	100.00	0.26	0.09	Open
47	100.00	0.26	0.09	Open
47a	100.00	0.80	1.41	Open
0	100.00	0.26	0.07	Open

LAMPIRAN 2

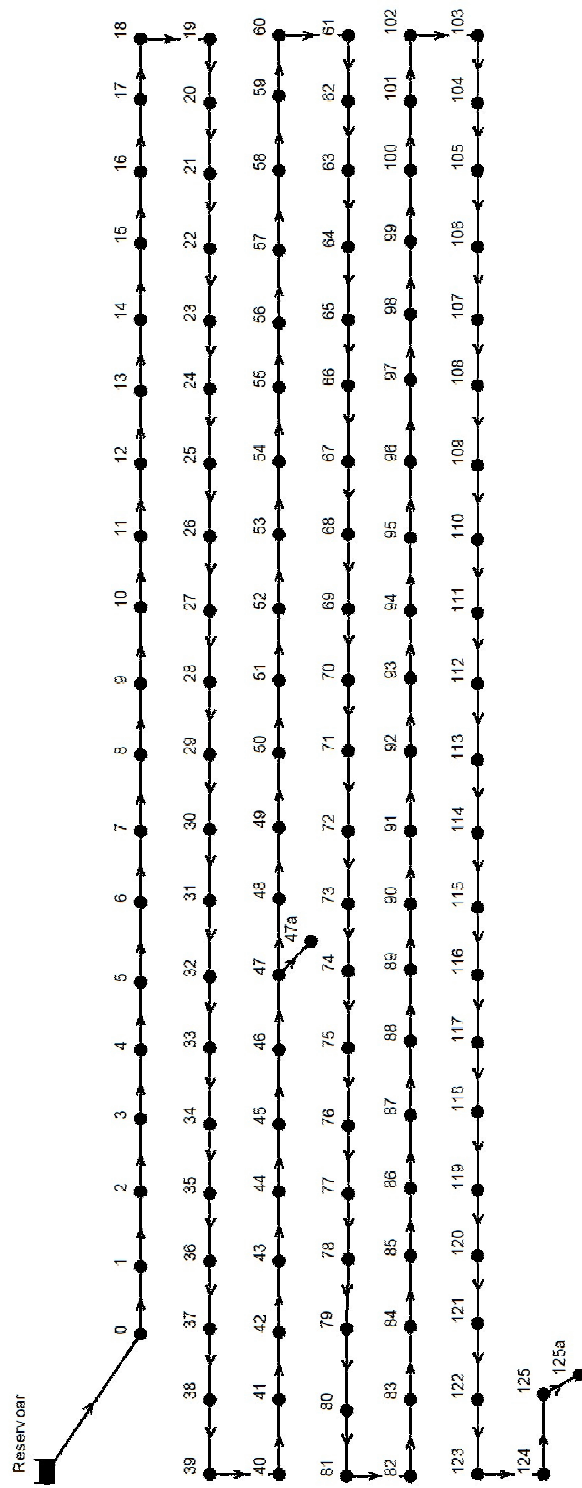
ANALISIS EPANET

PADA PENGEMBANGAN TAHAP II

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

Day 1, 12:00 AM



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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                *
*                               Analysis for Pipe Networks                  *
*                               Version 2.0                                *
*****

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Input File: final 4.NET

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
48	47	48	27	650
49	48	49	67	650
50	49	50	110	650
51	50	51	100	650
52	51	52	100	650
53	52	53	101	650
54	53	54	100	650
55	54	55	89	650
56	55	56	100	650
57	56	57	81	650
58	57	58	88	650
59	58	59	85	650
60	59	60	60	650
61	60	61	100	650
62	61	62	100	650
63	62	63	100	650
64	63	64	101	650
65	64	65	100	650
66	65	66	100	650
67	66	67	104	650
68	67	68	82	650
69	68	69	100	650
70	69	70	100	650
71	70	71	100	650
72	71	72	100	650
73	72	73	100	650
74	73	74	112	650
75	74	75	81	650
76	75	76	100	650
77	76	77	100	650
78	77	78	70	650
79	78	79	55	650
80	79	80	100	650
81	80	81	100	650
82	81	82	105	650
83	82	83	107	650

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
84	83	84	32	650
85	84	85	150	650
86	85	86	110	650
87	86	87	92	650
88	87	88	58	650
89	88	89	100	650
90	89	90	50	650
91	90	91	60	650
92	91	92	100	650
93	92	93	97	650
94	93	94	111	650
95	94	95	100	650
96	95	96	103	650
97	96	97	100	650
98	97	98	100	650
99	98	99	96	650
100	99	100	92	650
101	100	101	107	650
102	101	102	86	650
103	102	103	46	650
104	103	104	102	650
105	104	105	100	650
106	105	106	44	650
107	106	107	100	650
108	107	108	100	650
109	108	109	98	650
110	109	110	95	650
111	110	111	62	650
112	111	112	95	650
113	112	113	50	650
114	113	114	42	650
115	114	115	41	650
116	115	116	96	650
117	116	117	50	650
118	117	118	51	650
119	118	119	64	650
120	119	120	101	650
121	120	121	100	650
122	121	122	58	650
123	122	123	56	650
124	123	124	58	650
125	124	125	65	650
125a	125	125a	1	400
0	Reservoir	0	1	700

Page 4
Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
1	0.00	735.02	4.69	0.00
2	0.00	735.01	4.69	0.00
3	0.00	734.98	6.82	0.00
4	0.00	734.96	9.19	0.00
5	0.00	734.95	10.68	0.00
6	0.00	734.93	14.47	0.00
7	0.00	734.91	17.83	0.00
8	0.00	734.90	18.67	0.00
9	0.00	734.89	18.21	0.00
10	0.00	734.88	16.34	0.00
11	0.00	734.86	16.10	0.00
12	0.00	734.83	20.22	0.00
13	0.00	734.82	26.30	0.00
14	0.00	734.80	25.35	0.00
15	0.00	734.78	21.66	0.00
16	0.00	734.77	19.98	0.00
17	0.00	734.75	20.44	0.00
18	0.00	734.73	20.83	0.00
19	0.00	734.70	20.55	0.00
20	0.00	734.69	21.72	0.00
21	0.00	734.67	23.27	0.00
22	0.00	734.65	27.05	0.00
23	0.00	734.63	30.29	0.00
24	0.00	734.61	34.02	0.00
25	0.00	734.57	32.85	0.00
26	0.00	734.55	30.73	0.00
27	0.00	734.54	30.74	0.00
28	0.00	734.52	34.11	0.00
29	0.00	734.49	34.93	0.00
30	0.00	734.47	36.32	0.00
31	0.00	734.46	34.95	0.00
32	0.00	734.43	33.56	0.00
33	0.00	734.40	34.90	0.00
34	0.00	734.37	34.18	0.00
35	0.00	734.36	35.00	0.00
36	0.00	734.34	35.86	0.00
37	0.00	734.31	35.79	0.00
38	0.00	734.28	41.11	0.00
39	0.00	734.25	41.09	0.00
40	0.00	734.21	39.02	0.00
41	0.00	734.20	40.73	0.00
42	0.00	734.17	39.81	0.00
43	0.00	734.15	46.06	0.00
44	0.00	734.14	47.01	0.00
45	0.00	734.12	46.99	0.00
46	0.00	734.10	44.63	0.00
47	0.00	734.08	42.62	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
48	0.00	734.07	41.84	0.00
49	0.00	734.06	40.65	0.00
50	0.00	734.05	42.36	0.00
51	0.00	734.04	43.25	0.00
52	0.00	734.02	42.26	0.00
53	0.00	734.01	42.05	0.00
54	0.00	734.00	42.31	0.00
55	0.00	733.99	44.36	0.00
56	0.00	733.97	45.93	0.00
57	0.00	733.96	47.61	0.00
58	0.00	733.95	47.47	0.00
59	0.00	733.94	48.57	0.00
60	0.00	733.93	47.84	0.00
61	0.00	733.92	49.61	0.00
62	0.00	733.91	51.04	0.00
63	0.00	733.89	51.13	0.00
64	0.00	733.88	52.64	0.00
65	0.00	733.87	53.32	0.00
66	0.00	733.85	53.62	0.00
67	0.00	733.84	53.04	0.00
68	0.00	733.83	55.37	0.00
69	0.00	733.82	55.36	0.00
70	0.00	733.80	55.21	0.00
71	0.00	733.79	55.69	0.00
72	0.00	733.78	55.98	0.00
73	0.00	733.77	57.62	0.00
74	0.00	733.75	58.44	0.00
75	0.00	733.74	59.77	0.00
76	0.00	733.73	59.75	0.00
77	0.00	733.71	60.07	0.00
78	0.00	733.71	60.01	0.00
79	0.00	733.70	60.43	0.00
80	0.00	733.68	60.68	0.00
81	0.00	733.67	60.68	0.00
82	0.00	733.66	59.47	0.00
83	0.00	733.64	60.62	0.00
84	0.00	733.64	60.41	0.00
85	0.00	733.62	60.94	0.00
86	0.00	733.61	62.47	0.00
87	0.00	733.59	61.66	0.00
88	0.00	733.59	61.47	0.00
89	0.00	733.57	63.33	0.00
90	0.00	733.57	62.24	0.00
91	0.00	733.56	61.26	0.00
92	0.00	733.55	62.42	0.00
93	0.00	733.53	61.52	0.00
94	0.00	733.52	62.89	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
95	0.00	733.51	62.03	0.00
96	0.00	733.49	63.23	0.00
97	0.00	733.48	63.24	0.00
98	0.00	733.47	65.16	0.00
99	0.00	733.46	66.14	0.00
100	0.00	733.44	64.92	0.00
101	0.00	733.43	64.86	0.00
102	0.00	733.42	63.62	0.00
103	0.00	733.41	63.93	0.00
104	0.00	733.40	62.73	0.00
105	0.00	733.39	63.84	0.00
106	0.00	733.38	62.72	0.00
107	0.00	733.37	63.90	0.00
108	0.00	733.35	62.78	0.00
109	0.00	733.34	62.50	0.00
110	0.00	733.33	62.67	0.00
111	0.00	733.32	62.77	0.00
112	0.00	733.31	63.64	0.00
113	0.00	733.30	62.82	0.00
114	0.00	733.30	63.50	0.00
115	0.00	733.29	64.72	0.00
116	0.00	733.28	64.76	0.00
117	0.00	733.27	64.55	0.00
118	0.00	733.27	64.96	0.00
119	0.00	733.26	64.02	0.00
120	0.00	733.25	61.99	0.00
121	0.00	733.23	62.75	0.00
122	0.00	733.22	61.59	0.00
123	0.00	733.22	61.21	0.00
124	0.00	733.21	61.08	0.00
125	0.00	733.20	61.90	0.00
0	0.00	735.04	0.18	0.00
47a	100.00	734.07	42.61	0.00
125a	100.00	733.20	61.90	0.00
Reservoir	-200.00	735.04	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	200.00	0.52	0.33	Open
2	200.00	0.52	0.33	Open
3	200.00	0.52	0.33	Open
4	200.00	0.52	0.33	Open
5	200.00	0.52	0.33	Open
6	200.00	0.52	0.33	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
7	200.00	0.52	0.33	Open
8	200.00	0.52	0.33	Open
9	200.00	0.52	0.33	Open
10	200.00	0.52	0.32	Open
11	200.00	0.52	0.33	Open
12	200.00	0.52	0.33	Open
13	200.00	0.52	0.33	Open
14	200.00	0.52	0.33	Open
15	200.00	0.52	0.33	Open
16	200.00	0.52	0.33	Open
17	200.00	0.52	0.33	Open
18	200.00	0.52	0.33	Open
19	200.00	0.52	0.33	Open
20	200.00	0.52	0.33	Open
21	200.00	0.52	0.33	Open
22	200.00	0.52	0.33	Open
23	200.00	0.52	0.33	Open
24	200.00	0.52	0.33	Open
25	200.00	0.52	0.33	Open
26	200.00	0.52	0.33	Open
27	200.00	0.52	0.33	Open
28	200.00	0.52	0.33	Open
29	200.00	0.52	0.33	Open
30	200.00	0.52	0.33	Open
31	200.00	0.52	0.33	Open
32	200.00	0.52	0.33	Open
33	200.00	0.52	0.33	Open
34	200.00	0.52	0.33	Open
35	200.00	0.52	0.33	Open
36	200.00	0.52	0.33	Open
37	200.00	0.52	0.33	Open
38	200.00	0.52	0.33	Open
39	200.00	0.52	0.33	Open
40	200.00	0.52	0.33	Open
41	200.00	0.52	0.33	Open
42	200.00	0.52	0.33	Open
43	200.00	0.52	0.33	Open
44	200.00	0.52	0.33	Open
45	200.00	0.52	0.33	Open
46	200.00	0.52	0.33	Open
47	200.00	0.52	0.33	Open
48	100.00	0.30	0.13	Open
49	100.00	0.30	0.13	Open
50	100.00	0.30	0.13	Open
51	100.00	0.30	0.13	Open
52	100.00	0.30	0.13	Open
53	100.00	0.30	0.13	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
54	100.00	0.30	0.13	Open
55	100.00	0.30	0.13	Open
56	100.00	0.30	0.13	Open
57	100.00	0.30	0.13	Open
58	100.00	0.30	0.13	Open
59	100.00	0.30	0.13	Open
60	100.00	0.30	0.13	Open
61	100.00	0.30	0.13	Open
62	100.00	0.30	0.13	Open
63	100.00	0.30	0.13	Open
64	100.00	0.30	0.13	Open
65	100.00	0.30	0.13	Open
66	100.00	0.30	0.13	Open
67	100.00	0.30	0.13	Open
68	100.00	0.30	0.13	Open
69	100.00	0.30	0.13	Open
70	100.00	0.30	0.13	Open
71	100.00	0.30	0.13	Open
72	100.00	0.30	0.13	Open
73	100.00	0.30	0.13	Open
74	100.00	0.30	0.13	Open
75	100.00	0.30	0.13	Open
76	100.00	0.30	0.13	Open
77	100.00	0.30	0.13	Open
78	100.00	0.30	0.13	Open
79	100.00	0.30	0.13	Open
80	100.00	0.30	0.13	Open
81	100.00	0.30	0.13	Open
82	100.00	0.30	0.13	Open
83	100.00	0.30	0.13	Open
84	100.00	0.30	0.13	Open
85	100.00	0.30	0.13	Open
86	100.00	0.30	0.13	Open
87	100.00	0.30	0.13	Open
88	100.00	0.30	0.13	Open
89	100.00	0.30	0.13	Open
90	100.00	0.30	0.13	Open
91	100.00	0.30	0.13	Open
92	100.00	0.30	0.13	Open
93	100.00	0.30	0.13	Open
94	100.00	0.30	0.13	Open
95	100.00	0.30	0.13	Open
96	100.00	0.30	0.13	Open
97	100.00	0.30	0.13	Open
98	100.00	0.30	0.13	Open
99	100.00	0.30	0.13	Open
100	100.00	0.30	0.13	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
101	100.00	0.30	0.13	Open
102	100.00	0.30	0.13	Open
103	100.00	0.30	0.13	Open
104	100.00	0.30	0.13	Open
105	100.00	0.30	0.13	Open
106	100.00	0.30	0.13	Open
107	100.00	0.30	0.13	Open
108	100.00	0.30	0.13	Open
109	100.00	0.30	0.13	Open
110	100.00	0.30	0.13	Open
111	100.00	0.30	0.13	Open
112	100.00	0.30	0.13	Open
113	100.00	0.30	0.13	Open
114	100.00	0.30	0.13	Open
115	100.00	0.30	0.13	Open
116	100.00	0.30	0.13	Open
117	100.00	0.30	0.13	Open
118	100.00	0.30	0.13	Open
119	100.00	0.30	0.13	Open
120	100.00	0.30	0.13	Open
121	100.00	0.30	0.13	Open
122	100.00	0.30	0.13	Open
123	100.00	0.30	0.13	Open
124	100.00	0.30	0.13	Open
125	100.00	0.30	0.13	Open
47a	100.00	0.80	1.34	Open
125a	100.00	0.80	1.41	Open
0	200.00	0.52	0.30	Open

LAMPIRAN 3

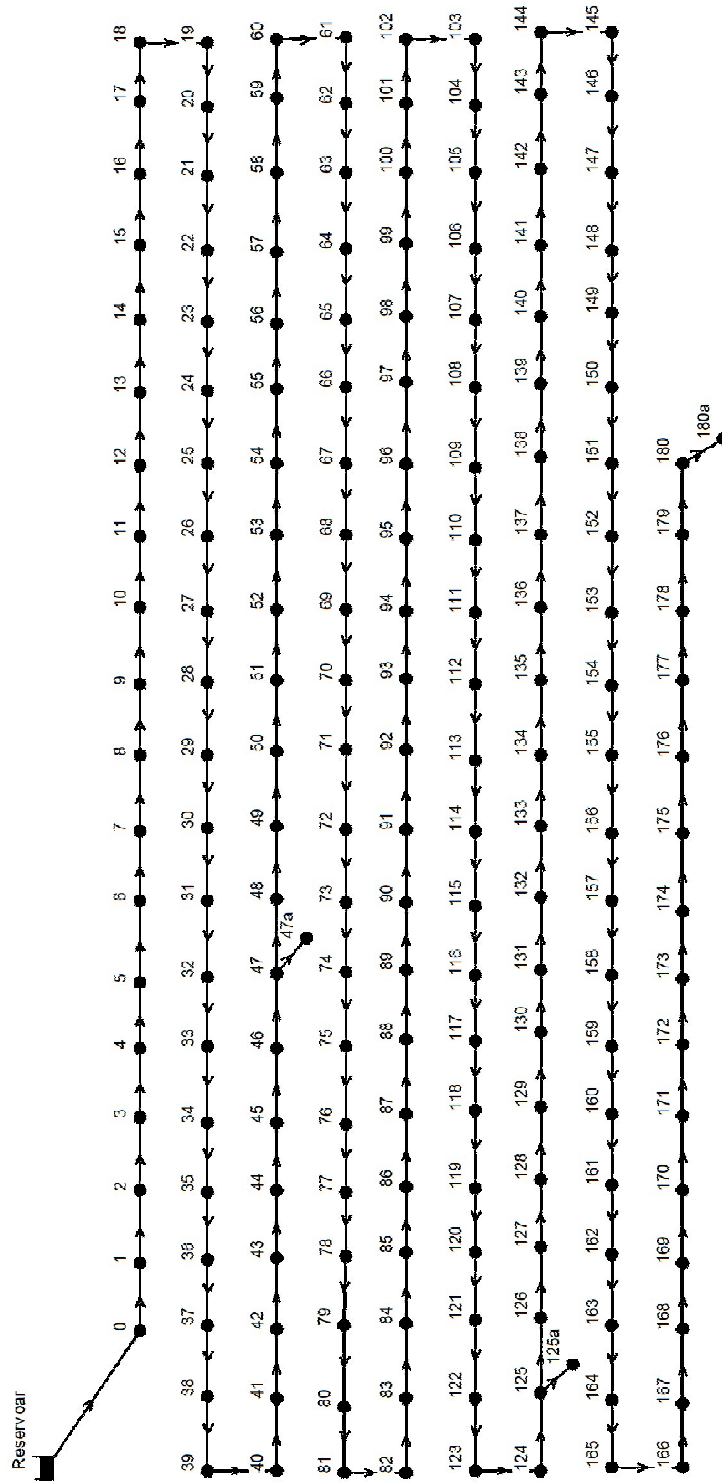
ANALISIS EPANET

PADA PENGEMBANGAN TAHAP III

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

Day 1, 12:00 AM



Page 1

1/25/2007 10:05:32 PM

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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                *
*                               Analysis for Pipe Networks                 *
*                               Version 2.0                               *
*****

```

Input File: final 3.NET

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

Page 2

Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
48	47	48	27	650
49	48	49	67	650
50	49	50	110	650
51	50	51	100	650
52	51	52	100	650
53	52	53	101	650
54	53	54	100	650
55	54	55	89	650
56	55	56	100	650
57	56	57	81	650
58	57	58	88	650
59	58	59	85	650
60	59	60	60	650
61	60	61	100	650
62	61	62	100	650
63	62	63	100	650
64	63	64	101	650
65	64	65	100	650
66	65	66	100	650
67	66	67	104	650
68	67	68	82	650
69	68	69	100	650
70	69	70	100	650
71	70	71	100	650
72	71	72	100	650
73	72	73	100	650
74	73	74	112	650
75	74	75	81	650
76	75	76	100	650
77	76	77	100	650
78	77	78	70	650
79	78	79	55	650
80	79	80	100	650
81	80	81	100	650
82	81	82	105	650
83	82	83	107	650

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
84	83	84	32	650
85	84	85	150	650
86	85	86	110	650
87	86	87	92	650
88	87	88	58	650
89	88	89	100	650
90	89	90	50	650
91	90	91	60	650
92	91	92	100	650
93	92	93	97	650
94	93	94	111	650
95	94	95	100	650
96	95	96	103	650
97	96	97	100	650
98	97	98	100	650
99	98	99	96	650
100	99	100	92	650
101	100	101	107	650
102	101	102	86	650
103	102	103	46	650
104	103	104	102	650
105	104	105	100	650
106	105	106	44	650
107	106	107	100	650
108	107	108	100	650
109	108	109	98	650
110	109	110	95	650
111	110	111	62	650
112	111	112	95	650
113	112	113	50	650
114	113	114	42	650
115	114	115	41	650
116	115	116	96	650
117	116	117	50	650
118	117	118	51	650
119	118	119	64	650
120	119	120	101	650
121	120	121	100	650
122	121	122	58	650
123	122	123	56	650
124	123	124	58	650
125	124	125	65	650
125a	125	125a	1	400
126	125	126	26	600
127	126	127	18	600
128	127	128	50	600
129	128	129	100	600
130	129	130	100	600
131	130	131	100	600
132	131	132	100	600
133	132	133	100	600

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
134	133	134	100	600
135	134	135	100	600
136	135	136	100	600
143	142	143	100	600
137	136	137	100	600
138	137	138	100	600
139	138	139	101	600
140	139	140	100	600
141	140	141	100	600
142	141	142	99	600
144	143	144	100	600
145	144	145	100	600
146	145	146	90	600
147	146	147	100	600
148	147	148	48	600
149	148	149	30	600
150	149	150	73	600
151	150	151	71	600
152	151	152	56	600
153	152	153	100	600
154	153	154	100	600
155	154	155	100	600
156	155	156	100	600
157	156	157	100	600
158	157	158	100	600
159	158	159	100	600
160	159	160	101	600
161	160	161	100	600
162	161	162	100	600
163	162	163	102	600
164	163	164	100	600
165	164	165	100	600
166	165	166	98	600
167	166	167	100	600
168	167	168	52	600
169	168	169	64	600
170	169	170	65	600
171	170	171	63	600
172	171	172	50	600
173	172	173	50	600
174	173	174	31	600
175	174	175	50	600
176	175	176	55	600
177	176	177	100	600
178	177	178	100	600
179	178	179	100	600

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
180	179	180	94	600
180a	180	180a	1	400
0	Reservoar	0	1	700

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
1	0.00	735.00	4.67	0.00
2	0.00	734.98	4.66	0.00
3	0.00	734.91	6.75	0.00
4	0.00	734.87	9.10	0.00
5	0.00	734.84	10.57	0.00
6	0.00	734.81	14.35	0.00
7	0.00	734.77	17.69	0.00
8	0.00	734.75	18.52	0.00
9	0.00	734.72	18.04	0.00
10	0.00	734.70	16.16	0.00
11	0.00	734.66	15.90	0.00
12	0.00	734.60	19.99	0.00
13	0.00	734.57	26.05	0.00
14	0.00	734.53	25.08	0.00
15	0.00	734.50	21.38	0.00
16	0.00	734.46	19.67	0.00
17	0.00	734.43	20.12	0.00
18	0.00	734.39	20.49	0.00
19	0.00	734.32	20.17	0.00
20	0.00	734.29	21.32	0.00
21	0.00	734.25	22.85	0.00
22	0.00	734.22	26.62	0.00
23	0.00	734.17	29.83	0.00
24	0.00	734.12	33.53	0.00
25	0.00	734.05	32.33	0.00
26	0.00	734.01	30.19	0.00
27	0.00	733.97	30.17	0.00
28	0.00	733.94	33.53	0.00
29	0.00	733.88	34.32	0.00
30	0.00	733.84	35.69	0.00
31	0.00	733.80	34.29	0.00
32	0.00	733.75	32.88	0.00
33	0.00	733.68	34.18	0.00
34	0.00	733.63	33.44	0.00
35	0.00	733.59	34.23	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
36	0.00	733.56	35.08	0.00
37	0.00	733.49	34.97	0.00
38	0.00	733.43	40.26	0.00
39	0.00	733.36	40.20	0.00
40	0.00	733.29	38.10	0.00
41	0.00	733.26	39.79	0.00
42	0.00	733.20	38.84	0.00
43	0.00	733.16	45.07	0.00
44	0.00	733.12	45.99	0.00
45	0.00	733.08	45.95	0.00
46	0.00	733.04	43.57	0.00
47	0.00	733.00	41.54	0.00
48	0.00	732.98	40.75	0.00
49	0.00	732.95	39.54	0.00
50	0.00	732.90	41.21	0.00
51	0.00	732.85	42.06	0.00
52	0.00	732.81	41.05	0.00
53	0.00	732.76	40.80	0.00
54	0.00	732.71	41.02	0.00
55	0.00	732.67	43.04	0.00
56	0.00	732.62	44.58	0.00
57	0.00	732.59	46.24	0.00
58	0.00	732.55	46.07	0.00
59	0.00	732.51	47.14	0.00
60	0.00	732.48	46.39	0.00
61	0.00	732.43	48.12	0.00
62	0.00	732.38	49.51	0.00
63	0.00	732.34	49.58	0.00
64	0.00	732.29	51.05	0.00
65	0.00	732.24	51.69	0.00
66	0.00	732.20	51.97	0.00
67	0.00	732.15	51.35	0.00
68	0.00	732.11	53.65	0.00
69	0.00	732.06	53.60	0.00
70	0.00	732.02	53.43	0.00
71	0.00	731.97	53.87	0.00
72	0.00	731.92	54.12	0.00
73	0.00	731.88	55.73	0.00
74	0.00	731.82	56.51	0.00
75	0.00	731.79	57.82	0.00
76	0.00	731.74	57.76	0.00
77	0.00	731.69	58.05	0.00
78	0.00	731.66	57.96	0.00
79	0.00	731.63	58.36	0.00
80	0.00	731.59	58.59	0.00
81	0.00	731.54	58.55	0.00
82	0.00	731.49	57.30	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
83	0.00	731.44	58.42	0.00
84	0.00	731.43	58.20	0.00
85	0.00	731.36	58.68	0.00
86	0.00	731.30	60.16	0.00
87	0.00	731.26	59.33	0.00
88	0.00	731.23	59.11	0.00
89	0.00	731.19	60.95	0.00
90	0.00	731.16	59.83	0.00
91	0.00	731.14	58.84	0.00
92	0.00	731.09	59.96	0.00
93	0.00	731.04	59.03	0.00
94	0.00	730.99	60.36	0.00
95	0.00	730.94	59.46	0.00
96	0.00	730.90	60.64	0.00
97	0.00	730.85	60.61	0.00
98	0.00	730.80	62.49	0.00
99	0.00	730.76	63.44	0.00
100	0.00	730.71	62.19	0.00
101	0.00	730.66	62.09	0.00
102	0.00	730.62	60.82	0.00
103	0.00	730.60	61.12	0.00
104	0.00	730.55	59.88	0.00
105	0.00	730.51	60.96	0.00
106	0.00	730.49	59.83	0.00
107	0.00	730.44	60.97	0.00
108	0.00	730.39	59.82	0.00
109	0.00	730.35	59.51	0.00
110	0.00	730.30	59.64	0.00
111	0.00	730.27	59.72	0.00
112	0.00	730.23	60.56	0.00
113	0.00	730.21	59.73	0.00
114	0.00	730.19	60.39	0.00
115	0.00	730.17	61.60	0.00
116	0.00	730.12	61.60	0.00
117	0.00	730.10	61.38	0.00
118	0.00	730.08	61.77	0.00
119	0.00	730.05	60.81	0.00
120	0.00	730.00	58.74	0.00
121	0.00	729.95	59.47	0.00
122	0.00	729.92	58.29	0.00
123	0.00	729.90	57.89	0.00
124	0.00	729.87	57.74	0.00
125	0.00	729.84	58.54	0.00
126	0.00	729.84	57.51	0.00
127	0.00	729.83	58.59	0.00
128	0.00	729.82	58.70	0.00
129	0.00	729.80	57.87	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
130	0.00	729.78	57.64	0.00
131	0.00	729.77	58.09	0.00
132	0.00	729.75	56.52	0.00
133	0.00	729.73	55.71	0.00
134	0.00	729.71	55.52	0.00
135	0.00	729.69	55.70	0.00
136	0.00	729.67	57.67	0.00
137	0.00	729.65	56.38	0.00
138	0.00	729.63	55.93	0.00
139	0.00	729.61	54.97	0.00
140	0.00	729.59	55.61	0.00
141	0.00	729.57	54.60	0.00
142	0.00	729.55	53.24	0.00
143	0.00	729.54	53.39	0.00
144	0.00	729.52	51.72	0.00
145	0.00	729.50	51.40	0.00
146	0.00	729.48	51.89	0.00
147	0.00	729.46	50.55	0.00
148	0.00	729.45	49.99	0.00
149	0.00	729.45	49.65	0.00
150	0.00	729.43	48.20	0.00
151	0.00	729.42	47.87	0.00
152	0.00	729.41	48.17	0.00
153	0.00	729.39	46.63	0.00
154	0.00	729.37	45.50	0.00
155	0.00	729.35	45.04	0.00
156	0.00	729.33	43.24	0.00
157	0.00	729.31	43.94	0.00
158	0.00	729.29	42.81	0.00
159	0.00	729.27	42.92	0.00
160	0.00	729.25	41.21	0.00
161	0.00	729.24	39.61	0.00
162	0.00	729.22	37.53	0.00
163	0.00	729.20	37.24	0.00
164	0.00	729.18	37.42	0.00
165	0.00	729.16	37.37	0.00
166	0.00	729.14	36.45	0.00
167	0.00	729.12	35.71	0.00
168	0.00	729.11	36.88	0.00
169	0.00	729.10	37.64	0.00
170	0.00	729.09	27.62	0.00
171	0.00	729.07	29.49	0.00
172	0.00	729.06	30.93	0.00
173	0.00	729.05	29.96	0.00
174	0.00	729.05	26.69	0.00
175	0.00	729.04	23.17	0.00
176	0.00	729.03	23.84	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
177	0.00	729.01	23.85	0.00
178	0.00	728.99	24.82	0.00
179	0.00	728.97	19.45	0.00
180	0.00	728.95	71.89	0.00
0	0.00	735.04	0.18	0.00
47a	100.00	732.99	41.53	0.00
125a	100.00	729.84	58.54	0.00
180a	100.00	728.95	71.89	0.00
Reservoar	-300.00	735.04	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	300.00	0.78	0.69	Open
2	300.00	0.78	0.69	Open
3	300.00	0.78	0.69	Open
4	300.00	0.78	0.69	Open
5	300.00	0.78	0.69	Open
6	300.00	0.78	0.69	Open
7	300.00	0.78	0.69	Open
8	300.00	0.78	0.69	Open
9	300.00	0.78	0.69	Open
10	300.00	0.78	0.69	Open
11	300.00	0.78	0.69	Open
12	300.00	0.78	0.69	Open
13	300.00	0.78	0.69	Open
14	300.00	0.78	0.69	Open
15	300.00	0.78	0.69	Open
16	300.00	0.78	0.69	Open
17	300.00	0.78	0.69	Open
18	300.00	0.78	0.69	Open
19	300.00	0.78	0.69	Open
20	300.00	0.78	0.69	Open
21	300.00	0.78	0.69	Open
22	300.00	0.78	0.69	Open
23	300.00	0.78	0.69	Open
24	300.00	0.78	0.69	Open
25	300.00	0.78	0.69	Open
26	300.00	0.78	0.69	Open
27	300.00	0.78	0.69	Open
28	300.00	0.78	0.69	Open
29	300.00	0.78	0.69	Open
30	300.00	0.78	0.69	Open
31	300.00	0.78	0.69	Open
32	300.00	0.78	0.69	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
33	300.00	0.78	0.69	Open
34	300.00	0.78	0.69	Open
35	300.00	0.78	0.69	Open
36	300.00	0.78	0.69	Open
37	300.00	0.78	0.69	Open
38	300.00	0.78	0.69	Open
39	300.00	0.78	0.69	Open
40	300.00	0.78	0.69	Open
41	300.00	0.78	0.69	Open
42	300.00	0.78	0.69	Open
43	300.00	0.78	0.69	Open
44	300.00	0.78	0.69	Open
45	300.00	0.78	0.69	Open
46	300.00	0.78	0.69	Open
47	300.00	0.78	0.69	Open
48	200.00	0.60	0.47	Open
49	200.00	0.60	0.47	Open
50	200.00	0.60	0.47	Open
51	200.00	0.60	0.47	Open
52	200.00	0.60	0.47	Open
53	200.00	0.60	0.47	Open
54	200.00	0.60	0.47	Open
55	200.00	0.60	0.47	Open
56	200.00	0.60	0.47	Open
57	200.00	0.60	0.47	Open
58	200.00	0.60	0.47	Open
59	200.00	0.60	0.47	Open
60	200.00	0.60	0.47	Open
61	200.00	0.60	0.47	Open
62	200.00	0.60	0.47	Open
63	200.00	0.60	0.47	Open
64	200.00	0.60	0.47	Open
65	200.00	0.60	0.47	Open
66	200.00	0.60	0.47	Open
67	200.00	0.60	0.47	Open
68	200.00	0.60	0.47	Open
69	200.00	0.60	0.47	Open
70	200.00	0.60	0.47	Open
71	200.00	0.60	0.47	Open
72	200.00	0.60	0.47	Open
73	200.00	0.60	0.47	Open
74	200.00	0.60	0.47	Open
75	200.00	0.60	0.47	Open
76	200.00	0.60	0.47	Open
77	200.00	0.60	0.47	Open
78	200.00	0.60	0.47	Open
79	200.00	0.60	0.47	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
80	200.00	0.60	0.47	Open
81	200.00	0.60	0.47	Open
82	200.00	0.60	0.47	Open
83	200.00	0.60	0.47	Open
84	200.00	0.60	0.47	Open
85	200.00	0.60	0.47	Open
86	200.00	0.60	0.47	Open
87	200.00	0.60	0.47	Open
88	200.00	0.60	0.47	Open
89	200.00	0.60	0.47	Open
90	200.00	0.60	0.47	Open
91	200.00	0.60	0.47	Open
92	200.00	0.60	0.47	Open
93	200.00	0.60	0.47	Open
94	200.00	0.60	0.47	Open
95	200.00	0.60	0.47	Open
96	200.00	0.60	0.47	Open
97	200.00	0.60	0.47	Open
98	200.00	0.60	0.47	Open
99	200.00	0.60	0.47	Open
100	200.00	0.60	0.47	Open
101	200.00	0.60	0.47	Open
102	200.00	0.60	0.47	Open
103	200.00	0.60	0.47	Open
104	200.00	0.60	0.47	Open
105	200.00	0.60	0.47	Open
106	200.00	0.60	0.47	Open
107	200.00	0.60	0.47	Open
108	200.00	0.60	0.47	Open
109	200.00	0.60	0.47	Open
110	200.00	0.60	0.47	Open
111	200.00	0.60	0.47	Open
112	200.00	0.60	0.47	Open
113	200.00	0.60	0.47	Open
114	200.00	0.60	0.47	Open
127	100.00	0.35	0.19	Open
128	100.00	0.35	0.19	Open
129	100.00	0.35	0.19	Open
130	100.00	0.35	0.19	Open
131	100.00	0.35	0.19	Open
132	100.00	0.35	0.19	Open
133	100.00	0.35	0.19	Open
134	100.00	0.35	0.19	Open
135	100.00	0.35	0.19	Open
136	100.00	0.35	0.19	Open
137	100.00	0.35	0.19	Open
138	100.00	0.35	0.19	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
139	100.00	0.35	0.19	Open
140	100.00	0.35	0.19	Open
141	100.00	0.35	0.19	Open
142	100.00	0.35	0.19	Open
143	100.00	0.35	0.19	Open
144	100.00	0.35	0.19	Open
145	100.00	0.35	0.19	Open
146	100.00	0.35	0.19	Open
147	100.00	0.35	0.19	Open
148	100.00	0.35	0.19	Open
149	100.00	0.35	0.19	Open
150	100.00	0.35	0.19	Open
151	100.00	0.35	0.19	Open
152	100.00	0.35	0.19	Open
153	100.00	0.35	0.19	Open
154	100.00	0.35	0.19	Open
155	100.00	0.35	0.19	Open
156	100.00	0.35	0.19	Open
157	100.00	0.35	0.19	Open
158	100.00	0.35	0.19	Open
159	100.00	0.35	0.19	Open
160	100.00	0.35	0.19	Open
161	100.00	0.35	0.19	Open
162	100.00	0.35	0.19	Open
163	100.00	0.35	0.19	Open
164	100.00	0.35	0.19	Open
165	100.00	0.35	0.19	Open
166	100.00	0.35	0.19	Open
167	100.00	0.35	0.19	Open
168	100.00	0.35	0.19	Open
169	100.00	0.35	0.19	Open
170	100.00	0.35	0.19	Open
171	100.00	0.35	0.19	Open
172	100.00	0.35	0.19	Open
173	100.00	0.35	0.19	Open
174	100.00	0.35	0.19	Open
175	100.00	0.35	0.19	Open
176	100.00	0.35	0.19	Open
177	100.00	0.35	0.19	Open
178	100.00	0.35	0.19	Open
179	100.00	0.35	0.19	Open
180	100.00	0.35	0.19	Open
115	200.00	0.60	0.47	Open
116	200.00	0.60	0.47	Open
117	200.00	0.60	0.47	Open
118	200.00	0.60	0.47	Open
119	200.00	0.60	0.47	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
120	200.00	0.60	0.47	Open
121	200.00	0.60	0.47	Open
122	200.00	0.60	0.47	Open
123	200.00	0.60	0.47	Open
124	200.00	0.60	0.47	Open
125	200.00	0.60	0.47	Open
126	100.00	0.35	0.19	Open
47a	100.00	0.80	1.41	Open
125a	100.00	0.80	1.41	Open
216	100.00	0.80	1.34	Open
0	300.00	0.78	0.67	Open

LAMPIRAN 4

ANALISIS EPANET

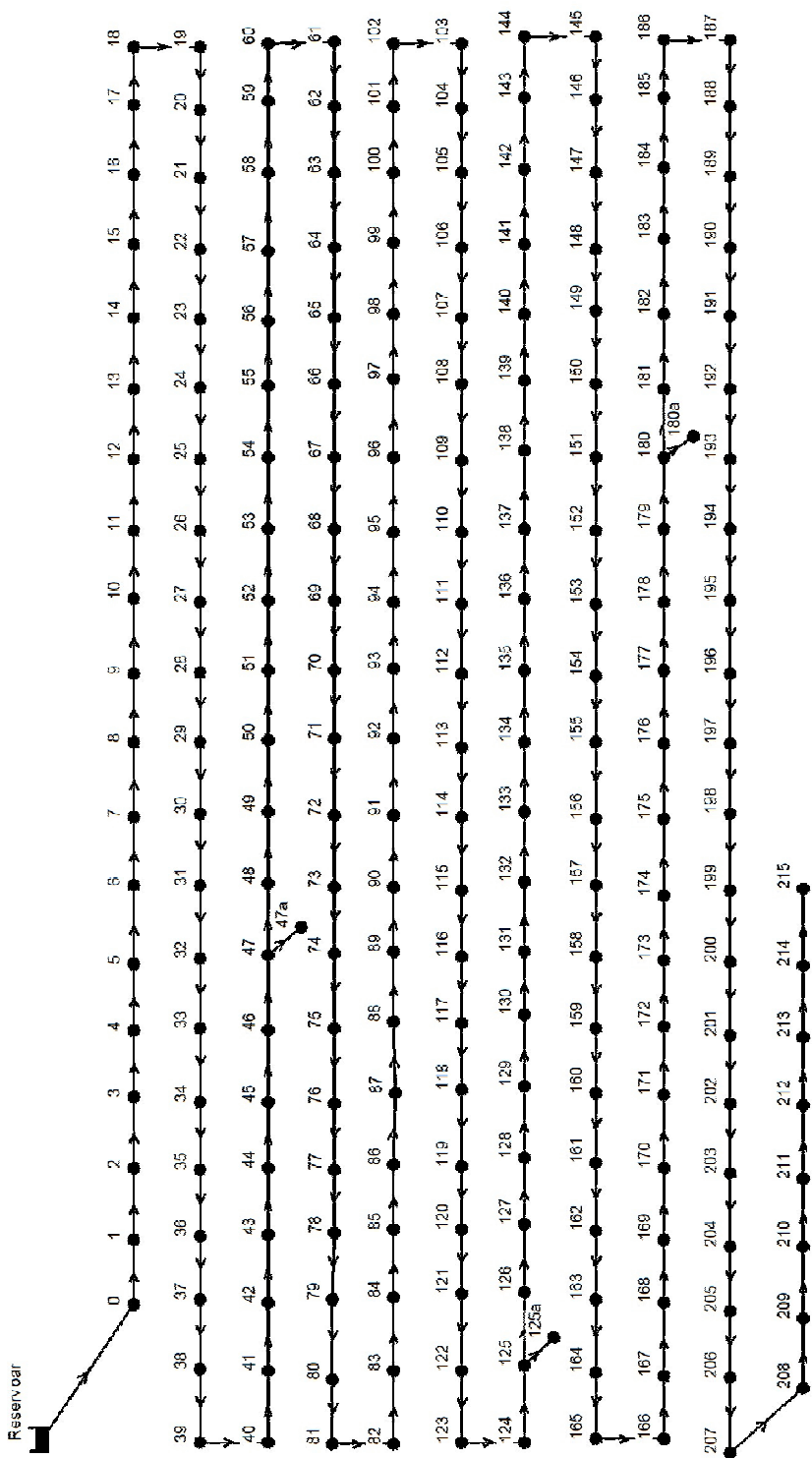
PADA PENGEMBANGAN TAHAP IV

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

(TANPA POMPA)

Day 1, 12:00 AM



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1/25/2007 10:05:48 PM

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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                 *
*                               Analysis for Pipe Networks                 *
*                               Version 2.0                               *
*****

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Input File: final 2A.NET

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

Page 2

Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
48	47	48	27	650
49	48	49	67	650
50	49	50	110	650
51	50	51	100	650
52	51	52	100	650
53	52	53	101	650
54	53	54	100	650
55	54	55	89	650
56	55	56	100	650
57	56	57	81	650
58	57	58	88	650
59	58	59	85	650
60	59	60	60	650
61	60	61	100	650
62	61	62	100	650
63	62	63	100	650
64	63	64	101	650
65	64	65	100	650
66	65	66	100	650
67	66	67	104	650
68	67	68	82	650
69	68	69	100	650
70	69	70	100	650
71	70	71	100	650
72	71	72	100	650
73	72	73	100	650
74	73	74	112	650
75	74	75	81	650
76	75	76	100	650
77	76	77	100	650
78	77	78	70	650
79	78	79	55	650
80	79	80	100	650
81	80	81	100	650
82	81	82	105	650
83	82	83	107	650

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
84	83	84	32	650
85	84	85	150	650
86	85	86	110	650
87	86	87	92	650
88	87	88	58	650
89	88	89	100	650
90	89	90	50	650
91	90	91	60	650
92	91	92	100	650
93	92	93	97	650
94	93	94	111	650
95	94	95	100	650
96	95	96	103	650
97	96	97	100	650
98	97	98	100	650
99	98	99	96	650
100	99	100	92	650
101	100	101	107	650
102	101	102	86	650
103	102	103	46	650
104	103	104	102	650
105	104	105	100	650
106	105	106	44	650
107	106	107	100	650
108	107	108	100	650
109	108	109	98	650
110	109	110	95	650
111	110	111	62	650
112	111	112	95	650
113	112	113	50	650
114	113	114	42	650
115	114	115	41	650
116	115	116	96	650
117	116	117	50	650
118	117	118	51	650
119	118	119	64	650
120	119	120	101	650
121	120	121	100	650
122	121	122	58	650
123	122	123	56	650
124	123	124	58	650
125	124	125	65	650
125a	125	125a	1	400
126	125	126	26	600
127	126	127	18	600
128	127	128	50	600
129	128	129	100	600
130	129	130	100	600
131	130	131	100	600
132	131	132	100	600

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
133	132	133	100	600
134	133	134	100	600
135	134	135	100	600
136	135	136	100	600
137	136	137	100	600
138	137	138	100	600
139	138	139	101	600
140	139	140	100	600
141	140	141	100	600
142	141	142	99	600
143	142	143	100	600
144	143	144	100	600
145	144	145	100	600
146	145	146	90	600
147	146	147	100	600
148	147	148	48	600
149	148	149	30	600
150	149	150	73	600
151	150	151	71	600
152	151	152	56	600
153	152	153	100	600
154	153	154	100	600
155	154	155	100	600
156	155	156	100	600
157	156	157	100	600
158	157	158	100	600
159	158	159	100	600
160	159	160	101	600
161	160	161	100	600
162	161	162	100	600
163	162	163	102	600
164	163	164	100	600
165	164	165	100	600
166	165	166	98	600
167	166	167	100	600
168	167	168	52	600
169	168	169	64	600
170	169	170	65	600
171	170	171	63	600
172	171	172	50	600
173	172	173	50	600
174	173	174	31	600
175	174	175	50	600
176	175	176	55	600
177	176	177	100	600
178	177	178	100	600
179	178	179	100	600
180	179	180	94	600
180a	180	180a	1	400

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
181	180	181	66	600
182	181	182	43	600
183	182	183	50	600
184	183	184	100	600
190	189	190	50	600
185	184	185	50	600
186	185	186	32	600
187	186	187	87	600
188	187	188	87	600
189	188	189	53	600
191	190	191	50	600
192	191	192	100	600
193	192	193	100	600
194	193	194	100	600
195	194	195	100	600
196	195	196	76	600
197	196	197	100	600
198	197	198	100	600
199	198	199	62	600
200	199	200	58	600
201	200	201	100	600
202	201	202	100	600
203	202	203	72	600
204	203	204	92	600
205	204	205	100	600
206	205	206	87	600
207	206	207	56	600
208	207	208	51	400
209	208	209	51	400
210	209	210	50	400
211	210	211	86	400
212	211	212	100	400
213	212	213	101	400
214	213	214	87	400
215	214	215	100	400
0	Reservoir	0	1	700

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Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
1	0.00	734.97	4.64	0.00
2	0.00	734.94	4.62	0.00
3	0.00	734.82	6.66	0.00
4	0.00	734.76	8.99	0.00
5	0.00	734.70	10.43	0.00
6	0.00	734.64	14.18	0.00
7	0.00	734.58	17.50	0.00
8	0.00	734.55	18.32	0.00
9	0.00	734.50	17.82	0.00
10	0.00	734.46	15.92	0.00
11	0.00	734.39	15.63	0.00
12	0.00	734.29	19.68	0.00
13	0.00	734.23	25.71	0.00
14	0.00	734.17	24.72	0.00
15	0.00	734.11	20.99	0.00
16	0.00	734.05	19.26	0.00
17	0.00	734.00	19.69	0.00
18	0.00	733.94	20.04	0.00
19	0.00	733.82	19.67	0.00
20	0.00	733.76	20.79	0.00
21	0.00	733.70	22.30	0.00
22	0.00	733.64	26.04	0.00
23	0.00	733.56	29.22	0.00
24	0.00	733.48	32.89	0.00
25	0.00	733.36	31.64	0.00
26	0.00	733.28	29.46	0.00
27	0.00	733.22	29.42	0.00
28	0.00	733.16	32.75	0.00
29	0.00	733.06	33.50	0.00
30	0.00	733.00	34.85	0.00
31	0.00	732.93	33.42	0.00
32	0.00	732.83	31.96	0.00
33	0.00	732.72	33.22	0.00
34	0.00	732.64	32.45	0.00
35	0.00	732.57	33.21	0.00
36	0.00	732.52	34.04	0.00
37	0.00	732.40	33.88	0.00
38	0.00	732.29	39.12	0.00
39	0.00	732.17	39.01	0.00
40	0.00	732.05	36.86	0.00
41	0.00	732.00	38.53	0.00
42	0.00	731.91	37.55	0.00
43	0.00	731.83	43.74	0.00
44	0.00	731.78	44.65	0.00
45	0.00	731.71	44.58	0.00
46	0.00	731.63	42.16	0.00
47	0.00	731.56	40.10	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
48	0.00	731.53	39.30	0.00
49	0.00	731.47	38.06	0.00
50	0.00	731.36	39.67	0.00
51	0.00	731.26	40.47	0.00
52	0.00	731.16	39.40	0.00
53	0.00	731.06	39.10	0.00
54	0.00	730.96	39.27	0.00
55	0.00	730.87	41.24	0.00
56	0.00	730.77	42.73	0.00
57	0.00	730.69	44.34	0.00
58	0.00	730.60	44.12	0.00
59	0.00	730.52	45.15	0.00
60	0.00	730.46	44.37	0.00
61	0.00	730.36	46.05	0.00
62	0.00	730.26	47.39	0.00
63	0.00	730.16	47.40	0.00
64	0.00	730.06	48.82	0.00
65	0.00	729.96	49.41	0.00
66	0.00	729.86	49.63	0.00
67	0.00	729.76	48.96	0.00
68	0.00	729.68	51.22	0.00
69	0.00	729.58	51.12	0.00
70	0.00	729.48	50.89	0.00
71	0.00	729.38	51.28	0.00
72	0.00	729.28	51.48	0.00
73	0.00	729.18	53.03	0.00
74	0.00	729.07	53.76	0.00
75	0.00	728.99	55.02	0.00
76	0.00	728.89	54.91	0.00
77	0.00	728.79	55.15	0.00
78	0.00	728.72	55.02	0.00
79	0.00	728.67	55.40	0.00
80	0.00	728.57	55.57	0.00
81	0.00	728.47	55.48	0.00
82	0.00	728.37	54.18	0.00
83	0.00	728.26	55.24	0.00
84	0.00	728.23	55.00	0.00
85	0.00	728.08	55.40	0.00
86	0.00	727.97	56.83	0.00
87	0.00	727.88	55.95	0.00
88	0.00	727.82	55.70	0.00
89	0.00	727.72	57.48	0.00
90	0.00	727.67	56.34	0.00
91	0.00	727.61	55.31	0.00
92	0.00	727.52	56.39	0.00
93	0.00	727.42	55.41	0.00
94	0.00	727.31	56.68	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
95	0.00	727.21	55.73	0.00
96	0.00	727.11	56.85	0.00
97	0.00	727.01	56.77	0.00
98	0.00	726.91	58.60	0.00
99	0.00	726.81	59.49	0.00
100	0.00	726.72	58.20	0.00
101	0.00	726.62	58.05	0.00
102	0.00	726.53	56.73	0.00
103	0.00	726.49	57.01	0.00
104	0.00	726.39	55.72	0.00
105	0.00	726.29	56.74	0.00
106	0.00	726.24	55.58	0.00
107	0.00	726.14	56.67	0.00
108	0.00	726.04	55.47	0.00
109	0.00	725.95	55.11	0.00
110	0.00	725.85	55.19	0.00
111	0.00	725.79	55.24	0.00
112	0.00	725.70	56.03	0.00
113	0.00	725.65	55.17	0.00
114	0.00	725.61	55.81	0.00
115	0.00	725.57	57.00	0.00
116	0.00	725.47	56.95	0.00
117	0.00	725.42	56.70	0.00
118	0.00	725.37	57.06	0.00
119	0.00	725.31	56.07	0.00
120	0.00	725.21	53.95	0.00
121	0.00	725.11	54.63	0.00
122	0.00	725.05	53.42	0.00
123	0.00	724.99	52.98	0.00
124	0.00	724.94	52.81	0.00
125	0.00	724.87	53.57	0.00
126	0.00	724.85	52.52	0.00
127	0.00	724.84	53.60	0.00
128	0.00	724.81	53.69	0.00
129	0.00	724.74	52.81	0.00
130	0.00	724.67	52.53	0.00
131	0.00	724.60	52.92	0.00
132	0.00	724.53	51.30	0.00
133	0.00	724.46	50.44	0.00
134	0.00	724.39	50.20	0.00
135	0.00	724.32	50.33	0.00
136	0.00	724.25	52.25	0.00
137	0.00	724.18	50.91	0.00
138	0.00	724.12	50.42	0.00
139	0.00	724.05	49.41	0.00
140	0.00	723.98	50.00	0.00
141	0.00	723.91	48.94	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
142	0.00	723.84	47.53	0.00
143	0.00	723.77	47.62	0.00
144	0.00	723.70	45.90	0.00
145	0.00	723.63	45.53	0.00
146	0.00	723.57	45.98	0.00
147	0.00	723.50	44.59	0.00
148	0.00	723.47	44.01	0.00
149	0.00	723.45	43.65	0.00
150	0.00	723.40	42.17	0.00
151	0.00	723.35	41.80	0.00
152	0.00	723.31	42.07	0.00
153	0.00	723.24	40.48	0.00
154	0.00	723.17	39.30	0.00
155	0.00	723.10	38.79	0.00
156	0.00	723.03	36.94	0.00
157	0.00	722.96	37.59	0.00
158	0.00	722.89	36.41	0.00
159	0.00	722.82	36.47	0.00
160	0.00	722.76	34.72	0.00
161	0.00	722.69	33.06	0.00
162	0.00	722.62	30.93	0.00
163	0.00	722.55	30.59	0.00
164	0.00	722.48	30.72	0.00
165	0.00	722.41	30.62	0.00
166	0.00	722.34	29.65	0.00
167	0.00	722.27	28.86	0.00
168	0.00	722.24	30.01	0.00
169	0.00	722.19	30.73	0.00
170	0.00	722.15	20.68	0.00
171	0.00	722.10	22.52	0.00
172	0.00	722.07	23.94	0.00
173	0.00	722.03	22.94	0.00
174	0.00	722.01	19.65	0.00
175	0.00	721.98	16.11	0.00
176	0.00	721.94	16.75	0.00
177	0.00	721.87	16.71	0.00
178	0.00	721.80	17.63	0.00
179	0.00	721.73	12.21	0.00
180	0.00	721.67	64.61	0.00
181	0.00	721.65	12.17	0.00
182	0.00	721.65	6.29	0.00
183	0.00	721.64	5.14	0.00
184	0.00	721.62	4.75	0.00
185	0.00	721.61	6.04	0.00
186	0.00	721.60	7.45	0.00
187	0.00	721.59	6.03	0.00
188	0.00	721.57	4.16	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
189	0.00	721.56	0.76	0.00
190	0.00	721.55	1.73	0.00
191	0.00	721.54	3.82	0.00
192	0.00	721.52	3.93	0.00
193	0.00	721.50	0.16	0.00
194	0.00	721.48	-3.12	0.00
195	0.00	721.46	-5.94	0.00
196	0.00	721.45	-6.52	0.00
197	0.00	721.43	-7.72	0.00
198	0.00	721.41	-13.49	0.00
199	0.00	721.40	-14.91	0.00
200	0.00	721.39	-13.40	0.00
201	0.00	721.37	-12.75	0.00
202	0.00	721.35	-10.10	0.00
203	0.00	721.34	-12.19	0.00
204	0.00	721.32	-13.29	0.00
205	0.00	721.30	-18.46	0.00
206	0.00	721.28	-17.26	0.00
207	0.00	721.27	-16.41	0.00
208	0.00	721.20	-16.03	0.00
209	0.00	721.13	-16.95	0.00
210	0.00	721.06	-20.54	0.00
211	0.00	720.94	-23.33	0.00
212	0.00	720.80	-25.97	0.00
213	0.00	720.67	-28.49	0.00
214	0.00	720.55	-29.77	0.00
215	100.00	720.41	-31.92	0.00
0	0.00	735.04	0.18	0.00
47a	100.00	731.56	40.10	0.00
125a	100.00	724.87	53.57	0.00
180a	100.00	721.67	64.61	0.00
Reservoar	-400.00	735.04	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	400.00	1.04	1.18	Open
2	400.00	1.04	1.18	Open
3	400.00	1.04	1.18	Open
4	400.00	1.04	1.18	Open
5	400.00	1.04	1.18	Open
6	400.00	1.04	1.18	Open
7	400.00	1.04	1.18	Open
8	400.00	1.04	1.18	Open
9	400.00	1.04	1.18	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
10	400.00	1.04	1.18	Open
11	400.00	1.04	1.18	Open
12	400.00	1.04	1.18	Open
13	400.00	1.04	1.18	Open
14	400.00	1.04	1.18	Open
15	400.00	1.04	1.18	Open
16	400.00	1.04	1.18	Open
17	400.00	1.04	1.18	Open
18	400.00	1.04	1.18	Open
19	400.00	1.04	1.18	Open
20	400.00	1.04	1.18	Open
21	400.00	1.04	1.18	Open
22	400.00	1.04	1.18	Open
23	400.00	1.04	1.18	Open
24	400.00	1.04	1.18	Open
25	400.00	1.04	1.18	Open
26	400.00	1.04	1.18	Open
27	400.00	1.04	1.18	Open
28	400.00	1.04	1.18	Open
29	400.00	1.04	1.18	Open
30	400.00	1.04	1.18	Open
31	400.00	1.04	1.18	Open
32	400.00	1.04	1.18	Open
33	400.00	1.04	1.18	Open
34	400.00	1.04	1.18	Open
35	400.00	1.04	1.18	Open
36	400.00	1.04	1.18	Open
37	400.00	1.04	1.18	Open
38	400.00	1.04	1.18	Open
39	400.00	1.04	1.18	Open
40	400.00	1.04	1.18	Open
41	400.00	1.04	1.18	Open
42	400.00	1.04	1.18	Open
43	400.00	1.04	1.18	Open
44	400.00	1.04	1.18	Open
45	400.00	1.04	1.18	Open
46	400.00	1.04	1.18	Open
47	400.00	1.04	1.18	Open
48	300.00	0.90	0.99	Open
49	300.00	0.90	0.99	Open
50	300.00	0.90	0.99	Open
51	300.00	0.90	0.99	Open
52	300.00	0.90	0.99	Open
53	300.00	0.90	0.99	Open
54	300.00	0.90	0.99	Open
55	300.00	0.90	0.99	Open
56	300.00	0.90	0.99	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
57	300.00	0.90	0.99	Open
58	300.00	0.90	0.99	Open
59	300.00	0.90	0.99	Open
60	300.00	0.90	0.99	Open
61	300.00	0.90	0.99	Open
62	300.00	0.90	0.99	Open
63	300.00	0.90	0.99	Open
64	300.00	0.90	0.99	Open
65	300.00	0.90	0.99	Open
66	300.00	0.90	0.99	Open
67	300.00	0.90	0.99	Open
68	300.00	0.90	0.99	Open
69	300.00	0.90	0.99	Open
70	300.00	0.90	0.99	Open
71	300.00	0.90	0.99	Open
72	300.00	0.90	0.99	Open
73	300.00	0.90	0.99	Open
74	300.00	0.90	0.99	Open
75	300.00	0.90	0.99	Open
76	300.00	0.90	0.99	Open
77	300.00	0.90	0.99	Open
78	300.00	0.90	0.99	Open
79	300.00	0.90	0.99	Open
80	300.00	0.90	0.99	Open
81	300.00	0.90	0.99	Open
82	300.00	0.90	0.99	Open
83	300.00	0.90	0.99	Open
84	300.00	0.90	0.99	Open
85	300.00	0.90	0.99	Open
86	300.00	0.90	0.99	Open
87	300.00	0.90	0.99	Open
88	300.00	0.90	0.99	Open
89	300.00	0.90	0.99	Open
90	300.00	0.90	0.99	Open
91	300.00	0.90	0.99	Open
92	300.00	0.90	0.99	Open
93	300.00	0.90	0.99	Open
94	300.00	0.90	0.99	Open
95	300.00	0.90	0.99	Open
96	300.00	0.90	0.99	Open
97	300.00	0.90	0.99	Open
98	300.00	0.90	0.99	Open
99	300.00	0.90	0.99	Open
100	300.00	0.90	0.99	Open
101	300.00	0.90	0.99	Open
102	300.00	0.90	0.99	Open
103	300.00	0.90	0.99	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
104	300.00	0.90	0.99	Open
105	300.00	0.90	0.99	Open
106	300.00	0.90	0.99	Open
107	300.00	0.90	0.99	Open
108	300.00	0.90	0.99	Open
109	300.00	0.90	0.99	Open
110	300.00	0.90	0.99	Open
111	300.00	0.90	0.99	Open
112	300.00	0.90	0.99	Open
113	300.00	0.90	0.99	Open
114	300.00	0.90	0.99	Open
127	200.00	0.71	0.69	Open
128	200.00	0.71	0.69	Open
129	200.00	0.71	0.69	Open
130	200.00	0.71	0.69	Open
131	200.00	0.71	0.69	Open
132	200.00	0.71	0.69	Open
133	200.00	0.71	0.69	Open
134	200.00	0.71	0.69	Open
135	200.00	0.71	0.69	Open
136	200.00	0.71	0.69	Open
137	200.00	0.71	0.69	Open
138	200.00	0.71	0.69	Open
139	200.00	0.71	0.69	Open
140	200.00	0.71	0.69	Open
141	200.00	0.71	0.69	Open
142	200.00	0.71	0.69	Open
143	200.00	0.71	0.69	Open
144	200.00	0.71	0.69	Open
145	200.00	0.71	0.69	Open
146	200.00	0.71	0.69	Open
147	200.00	0.71	0.69	Open
148	200.00	0.71	0.69	Open
149	200.00	0.71	0.69	Open
150	200.00	0.71	0.69	Open
151	200.00	0.71	0.69	Open
152	200.00	0.71	0.69	Open
153	200.00	0.71	0.69	Open
154	200.00	0.71	0.69	Open
155	200.00	0.71	0.69	Open
156	200.00	0.71	0.69	Open
157	200.00	0.71	0.69	Open
158	200.00	0.71	0.69	Open
159	200.00	0.71	0.69	Open
160	200.00	0.71	0.69	Open
161	200.00	0.71	0.69	Open
162	200.00	0.71	0.69	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
163	200.00	0.71	0.69	Open
164	200.00	0.71	0.69	Open
165	200.00	0.71	0.69	Open
166	200.00	0.71	0.69	Open
167	200.00	0.71	0.69	Open
168	200.00	0.71	0.69	Open
169	200.00	0.71	0.69	Open
170	200.00	0.71	0.69	Open
171	200.00	0.71	0.69	Open
172	200.00	0.71	0.69	Open
173	200.00	0.71	0.69	Open
174	200.00	0.71	0.69	Open
175	200.00	0.71	0.69	Open
176	200.00	0.71	0.69	Open
177	200.00	0.71	0.69	Open
178	200.00	0.71	0.69	Open
179	200.00	0.71	0.69	Open
180	200.00	0.71	0.69	Open
181	100.00	0.35	0.19	Open
182	100.00	0.35	0.19	Open
183	100.00	0.35	0.19	Open
184	100.00	0.35	0.19	Open
185	100.00	0.35	0.19	Open
186	100.00	0.35	0.19	Open
187	100.00	0.35	0.19	Open
188	100.00	0.35	0.19	Open
189	100.00	0.35	0.19	Open
190	100.00	0.35	0.19	Open
191	100.00	0.35	0.19	Open
192	100.00	0.35	0.19	Open
193	100.00	0.35	0.19	Open
194	100.00	0.35	0.19	Open
195	100.00	0.35	0.19	Open
196	100.00	0.35	0.19	Open
197	100.00	0.35	0.19	Open
200	100.00	0.35	0.19	Open
201	100.00	0.35	0.19	Open
202	100.00	0.35	0.19	Open
203	100.00	0.35	0.19	Open
204	100.00	0.35	0.19	Open
205	100.00	0.35	0.19	Open
206	100.00	0.35	0.19	Open
207	100.00	0.35	0.19	Open
208	100.00	0.80	1.38	Open
209	100.00	0.80	1.38	Open
210	100.00	0.80	1.38	Open
211	100.00	0.80	1.38	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
212	100.00	0.80	1.38	Open
213	100.00	0.80	1.38	Open
214	100.00	0.80	1.38	Open
215	100.00	0.80	1.38	Open
115	300.00	0.90	0.99	Open
116	300.00	0.90	0.99	Open
117	300.00	0.90	0.99	Open
118	300.00	0.90	0.99	Open
119	300.00	0.90	0.99	Open
120	300.00	0.90	0.99	Open
121	300.00	0.90	0.99	Open
122	300.00	0.90	0.99	Open
123	300.00	0.90	0.99	Open
124	300.00	0.90	0.99	Open
125	300.00	0.90	0.99	Open
126	200.00	0.71	0.69	Open
199	100.00	0.35	0.19	Open
198	100.00	0.35	0.19	Open
47a	100.00	0.80	1.34	Open
125a	100.00	0.80	1.34	Open
216	100.00	0.80	1.34	Open
0	400.00	1.04	1.19	Open

LAMPIRAN 5

ANALISIS EPANET

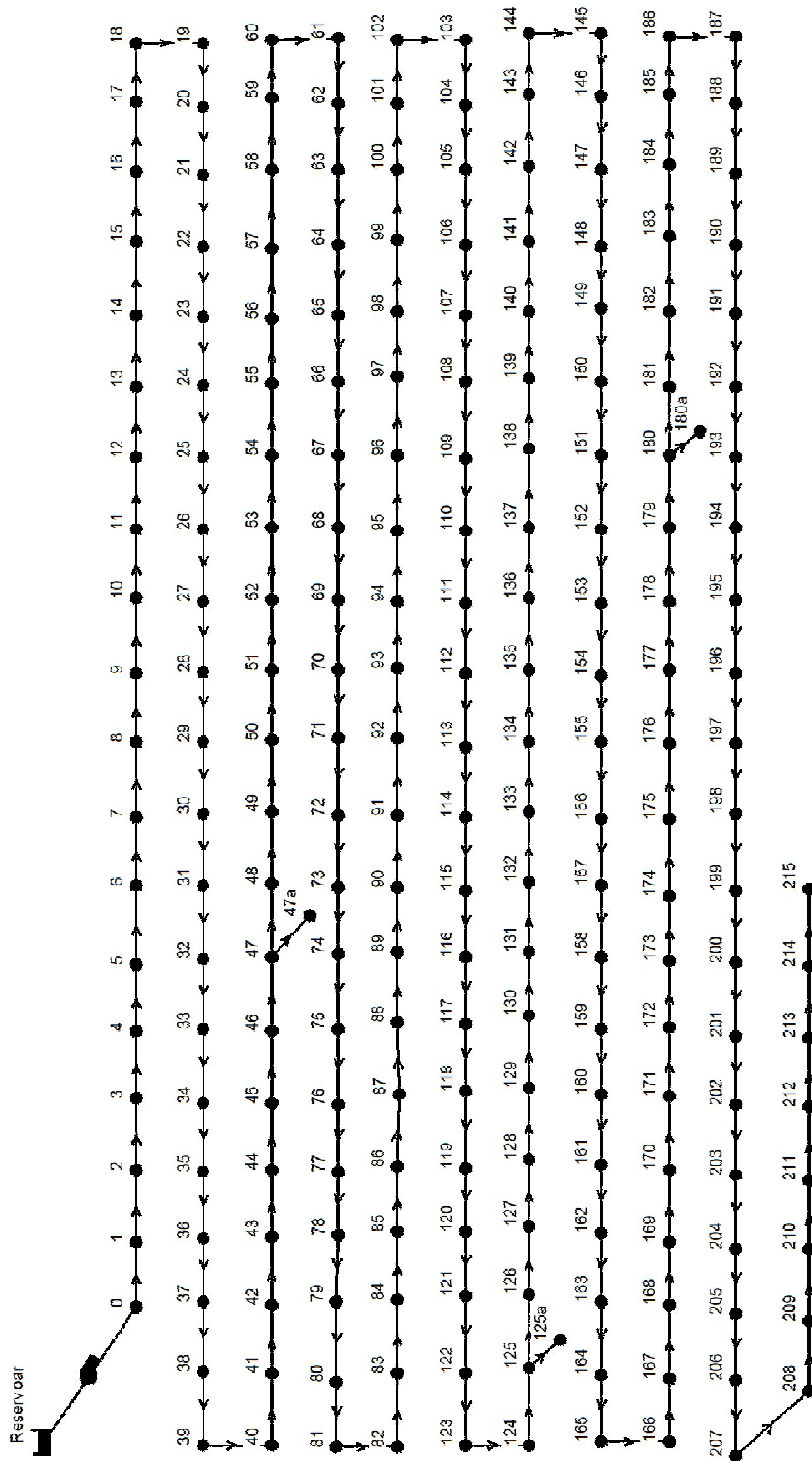
PADA PENGEMBANGAN TAHAP IV

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

(DENGAN POMPA)

Day 1, 12:00 AM



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1/25/2007 10:06:01 PM

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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                *
*                               Analysis for Pipe Networks                  *
*                               Version 2.0                                *
*****

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Input File: final 2.NET

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
48	47	48	27	650
49	48	49	67	650
50	49	50	110	650
51	50	51	100	650
52	51	52	100	650
53	52	53	101	650
54	53	54	100	650
55	54	55	89	650
56	55	56	100	650
57	56	57	81	650
58	57	58	88	650
59	58	59	85	650
60	59	60	60	650
61	60	61	100	650
62	61	62	100	650
63	62	63	100	650
64	63	64	101	650
65	64	65	100	650
66	65	66	100	650
67	66	67	104	650
68	67	68	82	650
69	68	69	100	650
70	69	70	100	650
71	70	71	100	650
72	71	72	100	650
73	72	73	100	650
74	73	74	112	650
75	74	75	81	650
76	75	76	100	650
77	76	77	100	650
78	77	78	70	650
79	78	79	55	650
80	79	80	100	650
81	80	81	100	650
82	81	82	105	650
83	82	83	107	650

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
84	83	84	32	650
85	84	85	150	650
86	85	86	110	650
87	86	87	92	650
88	87	88	58	650
89	88	89	100	650
90	89	90	50	650
91	90	91	60	650
92	91	92	100	650
93	92	93	97	650
94	93	94	111	650
95	94	95	100	650
96	95	96	103	650
97	96	97	100	650
98	97	98	100	650
99	98	99	96	650
100	99	100	92	650
101	100	101	107	650
102	101	102	86	650
103	102	103	46	650
104	103	104	102	650
105	104	105	100	650
106	105	106	44	650
107	106	107	100	650
108	107	108	100	650
109	108	109	98	650
110	109	110	95	650
111	110	111	62	650
112	111	112	95	650
113	112	113	50	650
114	113	114	42	650
115	114	115	41	650
116	115	116	96	650
117	116	117	50	650
118	117	118	51	650
119	118	119	64	650
120	119	120	101	650
121	120	121	100	650
122	121	122	58	650
123	122	123	56	650
124	123	124	58	650
125	124	125	65	650
125a	125	125a	1	400
126	125	126	26	600
127	126	127	18	600
128	127	128	50	600
129	128	129	100	600
130	129	130	100	600
131	130	131	100	600
132	131	132	100	600

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
133	132	133	100	600
134	133	134	100	600
135	134	135	100	600
136	135	136	100	600
137	136	137	100	600
138	137	138	100	600
139	138	139	101	600
140	139	140	100	600
141	140	141	100	600
142	141	142	99	600
143	142	143	100	600
144	143	144	100	600
145	144	145	100	600
146	145	146	90	600
147	146	147	100	600
148	147	148	48	600
149	148	149	30	600
150	149	150	73	600
151	150	151	71	600
152	151	152	56	600
153	152	153	100	600
154	153	154	100	600
155	154	155	100	600
156	155	156	100	600
157	156	157	100	600
158	157	158	100	600
159	158	159	100	600
160	159	160	101	600
161	160	161	100	600
162	161	162	100	600
163	162	163	102	600
164	163	164	100	600
165	164	165	100	600
166	165	166	98	600
167	166	167	100	600
168	167	168	52	600
169	168	169	64	600
170	169	170	65	600
171	170	171	63	600
172	171	172	50	600
173	172	173	50	600
174	173	174	31	600
175	174	175	50	600
176	175	176	55	600
177	176	177	100	600
178	177	178	100	600
179	178	179	100	600
180	179	180	94	600
180a	180	180a	1	400

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
181	180	181	66	600
182	181	182	43	600
183	182	183	50	600
184	183	184	100	600
190	189	190	50	600
185	184	185	50	600
186	185	186	32	600
187	186	187	87	600
188	187	188	87	600
189	188	189	53	600
191	190	191	50	600
192	191	192	100	600
193	192	193	100	600
194	193	194	100	600
195	194	195	100	600
196	195	196	76	600
197	196	197	100	600
198	197	198	100	600
199	198	199	62	600
200	199	200	58	600
201	200	201	100	600
202	201	202	100	600
203	202	203	72	600
204	203	204	92	600
205	204	205	100	600
206	205	206	87	600
207	206	207	56	600
208	207	208	51	400
209	208	209	51	400
210	209	210	50	400
211	210	211	86	400
212	211	212	100	400
213	212	213	101	400
214	213	214	87	400
215	214	215	100	400
pompa	Reservoir	0	#N/A	#N/A Pump

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Energy Usage:

Pump	Usage Factor	Avg. Effic.	Kw-hr /m3	Avg. Kw	Peak Kw	Cost /day
pompa	100.00	75.00	0.27	392.09	392.09	0.00
Demand Charge:						0.00
Total Cost:						0.00

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
1	0.00	809.97	79.64	0.00
2	0.00	809.94	79.62	0.00
3	0.00	809.82	81.66	0.00
4	0.00	809.76	83.99	0.00
5	0.00	809.70	85.43	0.00
6	0.00	809.64	89.18	0.00
7	0.00	809.58	92.50	0.00
8	0.00	809.55	93.32	0.00
9	0.00	809.50	92.82	0.00
10	0.00	809.47	90.93	0.00
11	0.00	809.39	90.63	0.00
12	0.00	809.29	94.68	0.00
13	0.00	809.23	100.71	0.00
14	0.00	809.17	99.72	0.00
15	0.00	809.11	95.99	0.00
16	0.00	809.06	94.27	0.00
17	0.00	809.00	94.69	0.00
18	0.00	808.94	95.04	0.00
19	0.00	808.82	94.67	0.00
20	0.00	808.76	95.79	0.00
21	0.00	808.70	97.30	0.00
22	0.00	808.64	101.04	0.00
23	0.00	808.56	104.22	0.00
24	0.00	808.48	107.89	0.00
25	0.00	808.36	106.64	0.00
26	0.00	808.28	104.46	0.00
27	0.00	808.22	104.42	0.00
28	0.00	808.16	107.75	0.00
29	0.00	808.06	108.50	0.00
30	0.00	808.00	109.85	0.00
31	0.00	807.93	108.42	0.00
32	0.00	807.84	106.97	0.00
33	0.00	807.72	108.22	0.00
34	0.00	807.64	107.45	0.00
35	0.00	807.57	108.21	0.00
36	0.00	807.52	109.04	0.00
37	0.00	807.40	108.88	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
38	0.00	807.29	114.12	0.00
39	0.00	807.17	114.01	0.00
40	0.00	807.06	111.87	0.00
41	0.00	807.00	113.53	0.00
42	0.00	806.91	112.55	0.00
43	0.00	806.83	118.74	0.00
44	0.00	806.78	119.65	0.00
45	0.00	806.71	119.58	0.00
46	0.00	806.63	117.16	0.00
47	0.00	806.56	115.10	0.00
48	0.00	806.53	114.30	0.00
49	0.00	806.47	113.06	0.00
50	0.00	806.36	114.67	0.00
51	0.00	806.26	115.47	0.00
52	0.00	806.16	114.40	0.00
53	0.00	806.06	114.10	0.00
54	0.00	805.96	114.27	0.00
55	0.00	805.87	116.24	0.00
56	0.00	805.77	117.73	0.00
57	0.00	805.69	119.34	0.00
58	0.00	805.60	119.12	0.00
59	0.00	805.52	120.15	0.00
60	0.00	805.46	119.37	0.00
61	0.00	805.36	121.05	0.00
62	0.00	805.26	122.39	0.00
63	0.00	805.16	122.40	0.00
64	0.00	805.06	123.82	0.00
65	0.00	804.96	124.41	0.00
66	0.00	804.86	124.63	0.00
67	0.00	804.76	123.96	0.00
68	0.00	804.68	126.22	0.00
69	0.00	804.58	126.12	0.00
70	0.00	804.48	125.89	0.00
71	0.00	804.38	126.28	0.00
72	0.00	804.28	126.48	0.00
73	0.00	804.18	128.03	0.00
74	0.00	804.07	128.76	0.00
75	0.00	803.99	130.02	0.00
76	0.00	803.89	129.91	0.00
77	0.00	803.79	130.15	0.00
78	0.00	803.73	130.03	0.00
79	0.00	803.67	130.40	0.00
80	0.00	803.57	130.57	0.00
81	0.00	803.47	130.48	0.00
82	0.00	803.37	129.18	0.00
83	0.00	803.26	130.24	0.00
84	0.00	803.23	130.00	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
85	0.00	803.08	130.40	0.00
86	0.00	802.97	131.83	0.00
87	0.00	802.88	130.95	0.00
88	0.00	802.82	130.70	0.00
89	0.00	802.72	132.48	0.00
90	0.00	802.68	131.35	0.00
91	0.00	802.62	130.32	0.00
92	0.00	802.52	131.39	0.00
93	0.00	802.42	130.41	0.00
94	0.00	802.31	131.68	0.00
95	0.00	802.21	130.73	0.00
96	0.00	802.11	131.85	0.00
97	0.00	802.01	131.77	0.00
98	0.00	801.91	133.60	0.00
99	0.00	801.82	134.50	0.00
100	0.00	801.72	133.20	0.00
101	0.00	801.62	133.05	0.00
102	0.00	801.53	131.73	0.00
103	0.00	801.49	132.01	0.00
104	0.00	801.39	130.72	0.00
105	0.00	801.29	131.74	0.00
106	0.00	801.24	130.58	0.00
107	0.00	801.14	131.67	0.00
108	0.00	801.05	130.48	0.00
109	0.00	800.95	130.11	0.00
110	0.00	800.85	130.19	0.00
111	0.00	800.79	130.24	0.00
112	0.00	800.70	131.03	0.00
113	0.00	800.65	130.17	0.00
114	0.00	800.61	130.81	0.00
115	0.00	800.57	132.00	0.00
116	0.00	800.47	131.95	0.00
117	0.00	800.42	131.70	0.00
118	0.00	800.37	132.06	0.00
119	0.00	800.31	131.07	0.00
120	0.00	800.21	128.95	0.00
121	0.00	800.11	129.63	0.00
122	0.00	800.05	128.42	0.00
123	0.00	800.00	127.99	0.00
124	0.00	799.94	127.81	0.00
125	0.00	799.87	128.57	0.00
126	0.00	799.86	127.53	0.00
127	0.00	799.84	128.60	0.00
128	0.00	799.81	128.69	0.00
129	0.00	799.74	127.81	0.00
130	0.00	799.67	127.53	0.00
131	0.00	799.60	127.92	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
132	0.00	799.53	126.30	0.00
133	0.00	799.46	125.44	0.00
134	0.00	799.39	125.20	0.00
135	0.00	799.32	125.33	0.00
136	0.00	799.26	127.26	0.00
137	0.00	799.19	125.92	0.00
138	0.00	799.12	125.42	0.00
139	0.00	799.05	124.41	0.00
140	0.00	798.98	125.00	0.00
141	0.00	798.91	123.94	0.00
142	0.00	798.84	122.53	0.00
143	0.00	798.77	122.62	0.00
144	0.00	798.70	120.90	0.00
145	0.00	798.63	120.53	0.00
146	0.00	798.57	120.98	0.00
147	0.00	798.50	119.59	0.00
148	0.00	798.47	119.01	0.00
149	0.00	798.45	118.65	0.00
150	0.00	798.40	117.17	0.00
151	0.00	798.35	116.80	0.00
152	0.00	798.31	117.07	0.00
153	0.00	798.24	115.48	0.00
154	0.00	798.17	114.30	0.00
155	0.00	798.10	113.79	0.00
156	0.00	798.03	111.94	0.00
157	0.00	797.96	112.59	0.00
158	0.00	797.90	111.42	0.00
159	0.00	797.83	111.48	0.00
160	0.00	797.76	109.72	0.00
161	0.00	797.69	108.06	0.00
162	0.00	797.62	105.93	0.00
163	0.00	797.55	105.59	0.00
164	0.00	797.48	105.72	0.00
165	0.00	797.41	105.62	0.00
166	0.00	797.34	104.65	0.00
167	0.00	797.27	103.86	0.00
168	0.00	797.24	105.01	0.00
169	0.00	797.19	105.73	0.00
170	0.00	797.15	95.68	0.00
171	0.00	797.10	97.52	0.00
172	0.00	797.07	98.94	0.00
173	0.00	797.03	97.94	0.00
174	0.00	797.01	94.65	0.00
175	0.00	796.98	91.11	0.00
176	0.00	796.94	91.75	0.00
177	0.00	796.87	91.71	0.00
178	0.00	796.80	92.63	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
179	0.00	796.73	87.21	0.00
180	0.00	796.67	139.61	0.00
181	0.00	796.66	87.18	0.00
182	0.00	796.65	81.29	0.00
183	0.00	796.64	80.14	0.00
184	0.00	796.62	79.75	0.00
185	0.00	796.61	81.04	0.00
186	0.00	796.60	82.45	0.00
187	0.00	796.59	81.03	0.00
188	0.00	796.57	79.16	0.00
189	0.00	796.56	75.76	0.00
190	0.00	796.55	76.73	0.00
191	0.00	796.54	78.82	0.00
192	0.00	796.52	78.93	0.00
193	0.00	796.50	75.16	0.00
194	0.00	796.48	71.88	0.00
195	0.00	796.46	69.06	0.00
196	0.00	796.45	68.48	0.00
197	0.00	796.43	67.28	0.00
198	0.00	796.41	61.51	0.00
199	0.00	796.40	60.09	0.00
200	0.00	796.39	61.60	0.00
201	0.00	796.37	62.25	0.00
202	0.00	796.35	64.90	0.00
203	0.00	796.34	62.82	0.00
204	0.00	796.32	61.71	0.00
205	0.00	796.30	56.54	0.00
206	0.00	796.28	57.74	0.00
207	0.00	796.27	58.59	0.00
208	0.00	796.20	58.97	0.00
209	0.00	796.13	58.05	0.00
210	0.00	796.06	54.46	0.00
211	0.00	795.94	51.67	0.00
212	0.00	795.81	49.04	0.00
213	0.00	795.67	46.51	0.00
214	0.00	795.55	45.23	0.00
215	100.00	795.41	43.08	0.00
0	0.00	810.04	75.18	0.00
47a	100.00	806.56	115.10	0.00
125a	100.00	799.87	128.57	0.00
180a	100.00	796.67	139.61	0.00
Reservoir	-400.00	735.04	0.00	0.00 Reservoir

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Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	400.00	1.04	1.18	Open
2	400.00	1.04	1.18	Open
3	400.00	1.04	1.18	Open
4	400.00	1.04	1.18	Open
5	400.00	1.04	1.18	Open
6	400.00	1.04	1.18	Open
7	400.00	1.04	1.18	Open
8	400.00	1.04	1.18	Open
9	400.00	1.04	1.18	Open
10	400.00	1.04	1.18	Open
11	400.00	1.04	1.18	Open
12	400.00	1.04	1.18	Open
13	400.00	1.04	1.18	Open
14	400.00	1.04	1.18	Open
15	400.00	1.04	1.18	Open
16	400.00	1.04	1.18	Open
17	400.00	1.04	1.18	Open
18	400.00	1.04	1.18	Open
19	400.00	1.04	1.18	Open
20	400.00	1.04	1.18	Open
21	400.00	1.04	1.18	Open
22	400.00	1.04	1.18	Open
23	400.00	1.04	1.18	Open
24	400.00	1.04	1.18	Open
25	400.00	1.04	1.18	Open
26	400.00	1.04	1.18	Open
27	400.00	1.04	1.18	Open
28	400.00	1.04	1.18	Open
29	400.00	1.04	1.18	Open
30	400.00	1.04	1.18	Open
31	400.00	1.04	1.18	Open
32	400.00	1.04	1.18	Open
33	400.00	1.04	1.18	Open
34	400.00	1.04	1.18	Open
35	400.00	1.04	1.18	Open
36	400.00	1.04	1.18	Open
37	400.00	1.04	1.18	Open
38	400.00	1.04	1.18	Open
39	400.00	1.04	1.18	Open
40	400.00	1.04	1.18	Open
41	400.00	1.04	1.18	Open
42	400.00	1.04	1.18	Open
43	400.00	1.04	1.18	Open
44	400.00	1.04	1.18	Open
45	400.00	1.04	1.18	Open
46	400.00	1.04	1.18	Open
47	400.00	1.04	1.18	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
48	300.00	0.90	0.99	Open
49	300.00	0.90	0.99	Open
50	300.00	0.90	0.99	Open
51	300.00	0.90	0.99	Open
52	300.00	0.90	0.99	Open
53	300.00	0.90	0.99	Open
54	300.00	0.90	0.99	Open
55	300.00	0.90	0.99	Open
56	300.00	0.90	0.99	Open
57	300.00	0.90	0.99	Open
58	300.00	0.90	0.99	Open
59	300.00	0.90	0.99	Open
60	300.00	0.90	0.99	Open
61	300.00	0.90	0.99	Open
62	300.00	0.90	0.99	Open
63	300.00	0.90	0.99	Open
64	300.00	0.90	0.99	Open
65	300.00	0.90	0.99	Open
66	300.00	0.90	0.99	Open
67	300.00	0.90	0.99	Open
68	300.00	0.90	0.99	Open
69	300.00	0.90	0.99	Open
70	300.00	0.90	0.99	Open
71	300.00	0.90	0.99	Open
72	300.00	0.90	0.99	Open
73	300.00	0.90	0.99	Open
74	300.00	0.90	0.99	Open
75	300.00	0.90	0.99	Open
76	300.00	0.90	0.99	Open
77	300.00	0.90	0.99	Open
78	300.00	0.90	0.99	Open
79	300.00	0.90	0.99	Open
80	300.00	0.90	0.99	Open
81	300.00	0.90	0.99	Open
82	300.00	0.90	0.99	Open
83	300.00	0.90	0.99	Open
84	300.00	0.90	0.99	Open
85	300.00	0.90	0.99	Open
86	300.00	0.90	0.99	Open
87	300.00	0.90	0.99	Open
88	300.00	0.90	0.99	Open
89	300.00	0.90	0.99	Open
90	300.00	0.90	0.99	Open
91	300.00	0.90	0.99	Open
92	300.00	0.90	0.99	Open
93	300.00	0.90	0.99	Open
94	300.00	0.90	0.99	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
95	300.00	0.90	0.99	Open
96	300.00	0.90	0.99	Open
97	300.00	0.90	0.99	Open
98	300.00	0.90	0.99	Open
99	300.00	0.90	0.99	Open
100	300.00	0.90	0.99	Open
101	300.00	0.90	0.99	Open
102	300.00	0.90	0.99	Open
103	300.00	0.90	0.99	Open
104	300.00	0.90	0.99	Open
105	300.00	0.90	0.99	Open
106	300.00	0.90	0.99	Open
107	300.00	0.90	0.99	Open
108	300.00	0.90	0.99	Open
109	300.00	0.90	0.99	Open
110	300.00	0.90	0.99	Open
111	300.00	0.90	0.99	Open
112	300.00	0.90	0.99	Open
113	300.00	0.90	0.99	Open
114	300.00	0.90	0.99	Open
127	200.00	0.71	0.69	Open
128	200.00	0.71	0.69	Open
129	200.00	0.71	0.69	Open
130	200.00	0.71	0.69	Open
131	200.00	0.71	0.69	Open
132	200.00	0.71	0.69	Open
133	200.00	0.71	0.69	Open
134	200.00	0.71	0.69	Open
135	200.00	0.71	0.69	Open
136	200.00	0.71	0.69	Open
137	200.00	0.71	0.69	Open
138	200.00	0.71	0.69	Open
139	200.00	0.71	0.69	Open
140	200.00	0.71	0.69	Open
141	200.00	0.71	0.69	Open
142	200.00	0.71	0.69	Open
143	200.00	0.71	0.69	Open
144	200.00	0.71	0.69	Open
145	200.00	0.71	0.69	Open
146	200.00	0.71	0.69	Open
147	200.00	0.71	0.69	Open
148	200.00	0.71	0.69	Open
149	200.00	0.71	0.69	Open
150	200.00	0.71	0.69	Open
151	200.00	0.71	0.69	Open
152	200.00	0.71	0.69	Open
153	200.00	0.71	0.69	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
154	200.00	0.71	0.69	Open
155	200.00	0.71	0.69	Open
156	200.00	0.71	0.69	Open
157	200.00	0.71	0.69	Open
158	200.00	0.71	0.69	Open
159	200.00	0.71	0.69	Open
160	200.00	0.71	0.69	Open
161	200.00	0.71	0.69	Open
162	200.00	0.71	0.69	Open
163	200.00	0.71	0.69	Open
164	200.00	0.71	0.69	Open
165	200.00	0.71	0.69	Open
166	200.00	0.71	0.69	Open
167	200.00	0.71	0.69	Open
168	200.00	0.71	0.69	Open
169	200.00	0.71	0.69	Open
170	200.00	0.71	0.69	Open
171	200.00	0.71	0.69	Open
172	200.00	0.71	0.69	Open
173	200.00	0.71	0.69	Open
174	200.00	0.71	0.69	Open
175	200.00	0.71	0.69	Open
176	200.00	0.71	0.69	Open
177	200.00	0.71	0.69	Open
178	200.00	0.71	0.69	Open
179	200.00	0.71	0.69	Open
180	200.00	0.71	0.69	Open
181	100.00	0.35	0.19	Open
182	100.00	0.35	0.19	Open
183	100.00	0.35	0.19	Open
184	100.00	0.35	0.19	Open
185	100.00	0.35	0.19	Open
186	100.00	0.35	0.19	Open
187	100.00	0.35	0.19	Open
188	100.00	0.35	0.19	Open
189	100.00	0.35	0.19	Open
190	100.00	0.35	0.19	Open
191	100.00	0.35	0.19	Open
192	100.00	0.35	0.19	Open
193	100.00	0.35	0.19	Open
194	100.00	0.35	0.19	Open
195	100.00	0.35	0.19	Open
196	100.00	0.35	0.19	Open
197	100.00	0.35	0.19	Open
200	100.00	0.35	0.19	Open
201	100.00	0.35	0.19	Open
202	100.00	0.35	0.19	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
203	100.00	0.35	0.19	Open
204	100.00	0.35	0.19	Open
205	100.00	0.35	0.19	Open
206	100.00	0.35	0.19	Open
207	100.00	0.35	0.19	Open
208	100.00	0.80	1.38	Open
209	100.00	0.80	1.38	Open
210	100.00	0.80	1.38	Open
211	100.00	0.80	1.38	Open
212	100.00	0.80	1.38	Open
213	100.00	0.80	1.38	Open
214	100.00	0.80	1.38	Open
215	100.00	0.80	1.38	Open
115	300.00	0.90	0.99	Open
116	300.00	0.90	0.99	Open
117	300.00	0.90	0.99	Open
118	300.00	0.90	0.99	Open
119	300.00	0.90	0.99	Open
120	300.00	0.90	0.99	Open
121	300.00	0.90	0.99	Open
122	300.00	0.90	0.99	Open
123	300.00	0.90	0.99	Open
124	300.00	0.90	0.99	Open
125	300.00	0.90	0.99	Open
126	200.00	0.71	0.69	Open
199	100.00	0.35	0.19	Open
198	100.00	0.35	0.19	Open
47a	100.00	0.80	1.34	Open
125a	100.00	0.80	1.34	Open
216	100.00	0.80	1.41	Open
pompa	400.00	0.00	-75.00	Open Pump

LAMPIRAN 6

ANALISIS EPANET

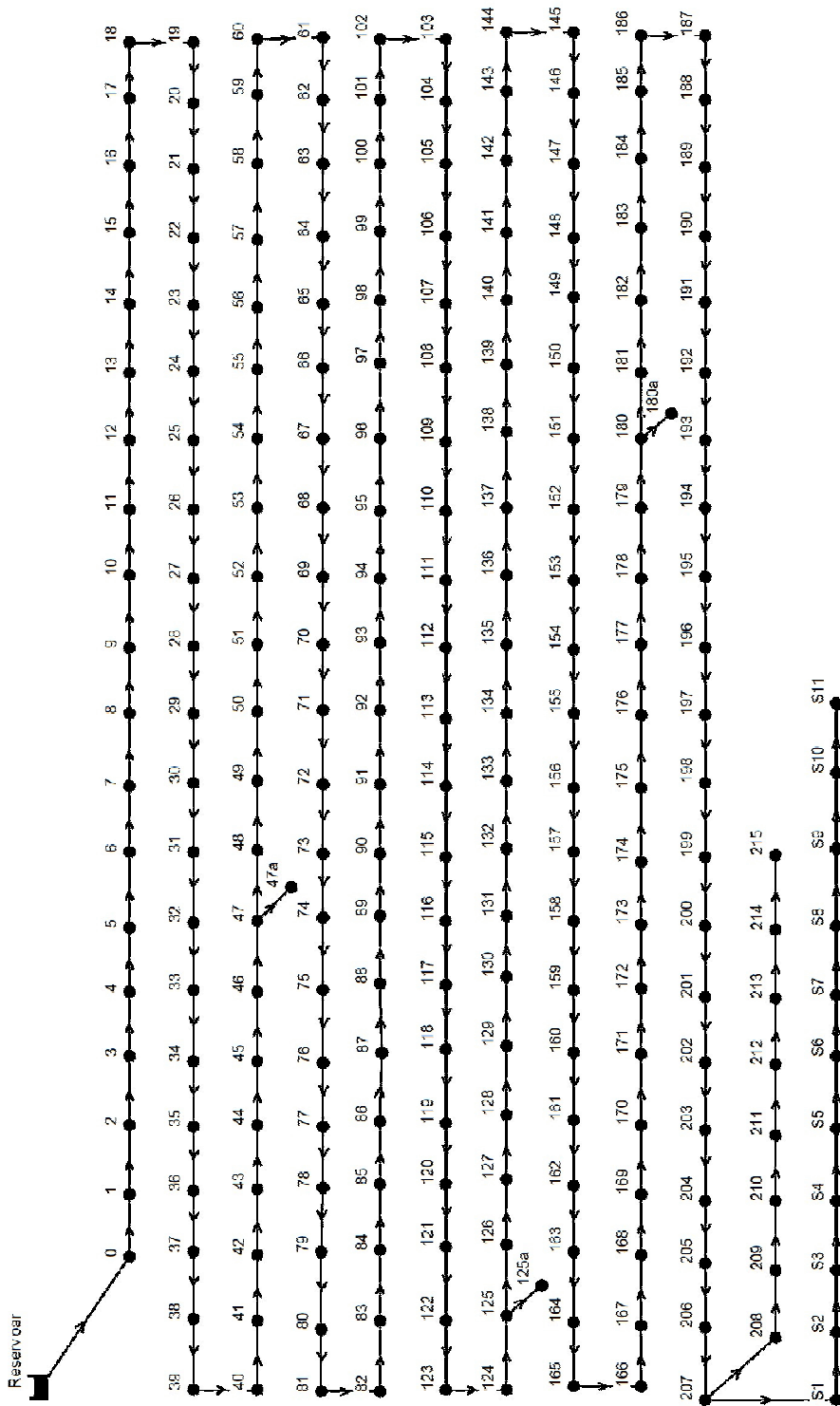
PADA PENGEMBANGAN TAHAP V

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

(TANPA POMPA)

Day 1, 12:00 AM



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1/25/2007 10:06:19 PM

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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                 *
*                               Analysis for Pipe Networks                   *
*                               Version 2.0                               *
*****

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Input File: final 1A.NET

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

Page 2

Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
48	47	48	27	650
49	48	49	67	650
50	49	50	110	650
51	50	51	100	650
52	51	52	100	650
53	52	53	101	650
54	53	54	100	650
55	54	55	89	650
56	55	56	100	650
57	56	57	81	650
58	57	58	88	650
59	58	59	85	650
60	59	60	60	650
61	60	61	100	650
62	61	62	100	650
63	62	63	100	650
64	63	64	101	650
65	64	65	100	650
66	65	66	100	650
67	66	67	104	650
68	67	68	82	650
69	68	69	100	650
70	69	70	100	650
71	70	71	100	650
72	71	72	100	650
73	72	73	100	650
74	73	74	112	650
75	74	75	81	650
76	75	76	100	650
77	76	77	100	650
78	77	78	70	650
79	78	79	55	650
80	79	80	100	650
81	80	81	100	650
82	81	82	105	650
83	82	83	107	650
84	83	84	32	650

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
85	84	85	150	650
86	85	86	110	650
87	86	87	92	650
88	87	88	58	650
89	88	89	100	650
90	89	90	50	650
91	90	91	60	650
92	91	92	100	650
93	92	93	97	650
94	93	94	111	650
95	94	95	100	650
96	95	96	103	650
97	96	97	100	650
98	97	98	100	650
99	98	99	96	650
100	99	100	92	650
101	100	101	107	650
102	101	102	86	650
103	102	103	46	650
104	103	104	102	650
105	104	105	100	650
106	105	106	44	650
107	106	107	100	650
108	107	108	100	650
109	108	109	98	650
110	109	110	95	650
111	110	111	62	650
112	111	112	95	650
113	112	113	50	650
114	113	114	42	650
115	114	115	41	650
116	115	116	96	650
117	116	117	50	650
118	117	118	51	650
119	118	119	64	650
120	119	120	101	650
121	120	121	100	650
122	121	122	58	650
123	122	123	56	650
124	123	124	58	650
125	124	125	65	650
125a	125	125a	1	400
126	125	126	26	600
127	126	127	18	600
128	127	128	50	600
129	128	129	100	600
130	129	130	100	600
131	130	131	100	600
132	131	132	100	600
133	132	133	100	600
134	133	134	100	600

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
135	134	135	100	600
136	135	136	100	600
137	136	137	100	600
138	137	138	100	600
139	138	139	101	600
140	139	140	100	600
141	140	141	100	600
142	141	142	99	600
143	142	143	100	600
144	143	144	100	600
145	144	145	100	600
146	145	146	90	600
147	146	147	100	600
148	147	148	48	600
149	148	149	30	600
150	149	150	73	600
151	150	151	71	600
152	151	152	56	600
153	152	153	100	600
154	153	154	100	600
155	154	155	100	600
156	155	156	100	600
157	156	157	100	600
158	157	158	100	600
159	158	159	100	600
160	159	160	101	600
161	160	161	100	600
162	161	162	100	600
163	162	163	102	600
164	163	164	100	600
165	164	165	100	600
166	165	166	98	600
167	166	167	100	600
168	167	168	52	600
169	168	169	64	600
170	169	170	65	600
171	170	171	63	600
172	171	172	50	600
173	172	173	50	600
174	173	174	31	600
175	174	175	50	600
176	175	176	55	600
177	176	177	100	600
178	177	178	100	600
179	178	179	100	600
180	179	180	94	600
180a	180	180a	1	400
181	180	181	66	600
182	181	182	43	600
183	182	183	50	600
184	183	184	100	600

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
185	184	185	50	600
186	185	186	32	600
187	186	187	87	600
188	187	188	87	600
189	188	189	53	600
190	189	190	50	600
191	190	191	50	600
192	191	192	100	600
193	192	193	100	600
194	193	194	100	600
195	194	195	100	600
196	195	196	76	600
197	196	197	100	600
198	197	198	100	600
199	198	199	62	600
200	199	200	58	600
201	200	201	100	600
202	201	202	100	600
203	202	203	72	600
204	203	204	92	600
205	204	205	100	600
206	205	206	87	600
207	206	207	56	600
208	207	208	51	400
209	208	209	51	400
210	209	210	50	400
211	210	211	86	400
212	211	212	100	400
213	212	213	101	400
214	213	214	87	400
215	214	215	100	400
S1	207	S1	60	400
S2	S1	S2	63	400
S3	S2	S3	44	400
S4	S3	S4	73	400
S5	S4	S5	50	400
S6	S5	S6	50	400
S7	S6	S7	50	400
S8	S7	S8	50	400
S9	S8	S9	50	400
S10	S9	S10	50	400
S11	S10	S11	40	400

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Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
0	Reservoir	0	1	700

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
1	0.00	734.94	4.61	0.00
2	0.00	734.88	4.56	0.00
3	0.00	734.70	6.54	0.00
4	0.00	734.61	8.84	0.00
5	0.00	734.53	10.26	0.00
6	0.00	734.44	13.98	0.00
7	0.00	734.35	17.27	0.00
8	0.00	734.29	18.06	0.00
9	0.00	734.22	17.54	0.00
10	0.00	734.17	15.63	0.00
11	0.00	734.06	15.30	0.00
12	0.00	733.90	19.29	0.00
13	0.00	733.82	25.30	0.00
14	0.00	733.73	24.28	0.00
15	0.00	733.64	20.52	0.00
16	0.00	733.55	18.76	0.00
17	0.00	733.46	19.15	0.00
18	0.00	733.37	19.47	0.00
19	0.00	733.19	19.04	0.00
20	0.00	733.11	20.14	0.00
21	0.00	733.02	21.62	0.00
22	0.00	732.93	25.33	0.00
23	0.00	732.80	28.46	0.00
24	0.00	732.68	32.09	0.00
25	0.00	732.50	30.78	0.00
26	0.00	732.38	28.56	0.00
27	0.00	732.29	28.49	0.00
28	0.00	732.20	31.79	0.00
29	0.00	732.04	32.48	0.00
30	0.00	731.95	33.80	0.00
31	0.00	731.86	32.35	0.00
32	0.00	731.71	30.84	0.00
33	0.00	731.53	32.03	0.00
34	0.00	731.41	31.22	0.00
35	0.00	731.31	31.95	0.00
36	0.00	731.23	32.75	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
37	0.00	731.04	32.52	0.00
38	0.00	730.88	37.71	0.00
39	0.00	730.70	37.54	0.00
40	0.00	730.53	35.34	0.00
41	0.00	730.45	36.98	0.00
42	0.00	730.31	35.95	0.00
43	0.00	730.19	42.10	0.00
44	0.00	730.11	42.98	0.00
45	0.00	730.00	42.87	0.00
46	0.00	729.88	40.41	0.00
47	0.00	729.78	38.32	0.00
48	0.00	729.73	37.50	0.00
49	0.00	729.62	36.21	0.00
50	0.00	729.43	37.74	0.00
51	0.00	729.26	38.47	0.00
52	0.00	729.09	37.33	0.00
53	0.00	728.92	36.96	0.00
54	0.00	728.75	37.06	0.00
55	0.00	728.60	38.97	0.00
56	0.00	728.44	40.40	0.00
57	0.00	728.30	41.95	0.00
58	0.00	728.15	41.67	0.00
59	0.00	728.01	42.64	0.00
60	0.00	727.90	41.81	0.00
61	0.00	727.74	43.43	0.00
62	0.00	727.57	44.70	0.00
63	0.00	727.40	44.64	0.00
64	0.00	727.23	45.99	0.00
65	0.00	727.06	46.51	0.00
66	0.00	726.89	46.66	0.00
67	0.00	726.71	45.91	0.00
68	0.00	726.58	48.12	0.00
69	0.00	726.41	47.95	0.00
70	0.00	726.24	47.65	0.00
71	0.00	726.07	47.97	0.00
72	0.00	725.90	48.10	0.00
73	0.00	725.73	49.58	0.00
74	0.00	725.54	50.23	0.00
75	0.00	725.40	51.43	0.00
76	0.00	725.24	51.26	0.00
77	0.00	725.07	51.43	0.00
78	0.00	724.95	51.25	0.00
79	0.00	724.86	51.59	0.00
80	0.00	724.69	51.69	0.00
81	0.00	724.52	51.53	0.00
82	0.00	724.34	50.15	0.00
83	0.00	724.16	51.14	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
84	0.00	724.11	50.88	0.00
85	0.00	723.85	51.17	0.00
86	0.00	723.67	52.53	0.00
87	0.00	723.51	51.58	0.00
88	0.00	723.41	51.29	0.00
89	0.00	723.24	53.00	0.00
90	0.00	723.16	51.83	0.00
91	0.00	723.06	50.76	0.00
92	0.00	722.89	51.76	0.00
93	0.00	722.73	50.72	0.00
94	0.00	722.54	51.91	0.00
95	0.00	722.37	50.89	0.00
96	0.00	722.19	51.93	0.00
97	0.00	722.03	51.79	0.00
98	0.00	721.86	53.55	0.00
99	0.00	721.69	54.37	0.00
100	0.00	721.54	53.02	0.00
101	0.00	721.36	52.79	0.00
102	0.00	721.21	51.41	0.00
103	0.00	721.14	51.66	0.00
104	0.00	720.96	50.29	0.00
105	0.00	720.79	51.24	0.00
106	0.00	720.72	50.06	0.00
107	0.00	720.55	51.08	0.00
108	0.00	720.38	49.81	0.00
109	0.00	720.22	49.38	0.00
110	0.00	720.06	49.40	0.00
111	0.00	719.95	49.40	0.00
112	0.00	719.79	50.12	0.00
113	0.00	719.71	49.23	0.00
114	0.00	719.64	49.84	0.00
115	0.00	719.57	51.00	0.00
116	0.00	719.40	50.88	0.00
117	0.00	719.32	50.60	0.00
118	0.00	719.23	50.92	0.00
119	0.00	719.13	49.89	0.00
120	0.00	718.95	47.69	0.00
121	0.00	718.79	48.31	0.00
122	0.00	718.69	47.06	0.00
123	0.00	718.59	46.58	0.00
124	0.00	718.50	46.37	0.00
125	0.00	718.39	47.09	0.00
126	0.00	718.35	46.02	0.00
127	0.00	718.32	47.08	0.00
128	0.00	718.25	47.13	0.00
129	0.00	718.10	46.17	0.00
130	0.00	717.95	45.81	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
131	0.00	717.81	46.13	0.00
132	0.00	717.66	44.43	0.00
133	0.00	717.52	43.50	0.00
134	0.00	717.37	43.18	0.00
135	0.00	717.22	43.23	0.00
136	0.00	717.08	45.08	0.00
137	0.00	716.93	43.66	0.00
138	0.00	716.78	43.08	0.00
139	0.00	716.64	42.00	0.00
140	0.00	716.49	42.51	0.00
141	0.00	716.34	41.37	0.00
142	0.00	716.20	39.89	0.00
143	0.00	716.05	39.90	0.00
144	0.00	715.90	38.10	0.00
145	0.00	715.76	37.66	0.00
146	0.00	715.63	38.04	0.00
147	0.00	715.48	36.57	0.00
148	0.00	715.41	35.95	0.00
149	0.00	715.37	35.57	0.00
150	0.00	715.26	34.03	0.00
151	0.00	715.15	33.60	0.00
152	0.00	715.07	33.83	0.00
153	0.00	714.93	32.17	0.00
154	0.00	714.78	30.91	0.00
155	0.00	714.63	30.32	0.00
156	0.00	714.49	28.40	0.00
157	0.00	714.34	28.97	0.00
158	0.00	714.19	27.71	0.00
159	0.00	714.05	27.70	0.00
160	0.00	713.90	25.86	0.00
161	0.00	713.75	24.12	0.00
162	0.00	713.61	21.92	0.00
163	0.00	713.46	21.50	0.00
164	0.00	713.31	21.55	0.00
165	0.00	713.16	21.37	0.00
166	0.00	713.02	20.33	0.00
167	0.00	712.87	19.46	0.00
168	0.00	712.80	20.57	0.00
169	0.00	712.70	21.24	0.00
170	0.00	712.61	11.14	0.00
171	0.00	712.52	12.94	0.00
172	0.00	712.44	14.31	0.00
173	0.00	712.37	13.28	0.00
174	0.00	712.33	9.97	0.00
175	0.00	712.25	6.38	0.00
176	0.00	712.17	6.98	0.00
177	0.00	712.03	6.87	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
178	0.00	711.88	7.71	0.00
179	0.00	711.73	2.21	0.00
180	0.00	711.59	54.53	0.00
181	0.00	711.55	2.07	0.00
182	0.00	711.52	-3.84	0.00
183	0.00	711.49	-5.01	0.00
184	0.00	711.42	-5.45	0.00
185	0.00	711.38	-4.19	0.00
186	0.00	711.36	-2.79	0.00
187	0.00	711.30	-4.26	0.00
188	0.00	711.24	-6.17	0.00
189	0.00	711.20	-9.60	0.00
190	0.00	711.17	-8.65	0.00
191	0.00	711.13	-6.59	0.00
192	0.00	711.06	-6.53	0.00
193	0.00	711.00	-10.34	0.00
194	0.00	710.93	-13.67	0.00
195	0.00	710.86	-16.54	0.00
196	0.00	710.80	-17.17	0.00
197	0.00	710.74	-18.41	0.00
198	0.00	710.67	-24.23	0.00
199	0.00	710.62	-25.69	0.00
200	0.00	710.58	-24.21	0.00
201	0.00	710.51	-23.61	0.00
202	0.00	710.44	-21.01	0.00
203	0.00	710.40	-23.12	0.00
204	0.00	710.33	-24.28	0.00
205	0.00	710.26	-29.50	0.00
206	0.00	710.20	-28.34	0.00
207	0.00	710.16	-27.52	0.00
208	0.00	710.09	-27.14	0.00
209	0.00	710.02	-28.06	0.00
210	0.00	709.95	-31.65	0.00
211	0.00	709.84	-34.43	0.00
212	0.00	709.70	-37.07	0.00
213	0.00	709.56	-39.60	0.00
214	0.00	709.44	-40.88	0.00
215	100.00	709.30	-43.03	0.00
S1	0.00	710.08	-27.38	0.00
S2	0.00	709.99	-27.95	0.00
S3	0.00	709.93	-28.37	0.00
S4	0.00	709.83	-29.02	0.00
S5	0.00	709.76	-29.23	0.00
S6	0.00	709.69	-29.40	0.00
S7	0.00	709.63	-29.57	0.00
S8	0.00	709.56	-29.75	0.00
S9	0.00	709.49	-29.93	0.00

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
S10	0.00	709.42	-30.30	0.00
S11	100.00	709.36	-30.45	0.00
0	0.00	735.04	0.18	0.00
47a	100.00	729.78	38.32	0.00
125a	100.00	718.38	47.08	0.00
180a	100.00	711.59	54.53	0.00
Reservoar	-500.00	735.04	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	500.00	1.30	1.78	Open
2	500.00	1.30	1.78	Open
3	500.00	1.30	1.78	Open
4	500.00	1.30	1.78	Open
5	500.00	1.30	1.78	Open
6	500.00	1.30	1.78	Open
7	500.00	1.30	1.78	Open
8	500.00	1.30	1.78	Open
9	500.00	1.30	1.78	Open
10	500.00	1.30	1.78	Open
11	500.00	1.30	1.78	Open
12	500.00	1.30	1.78	Open
13	500.00	1.30	1.78	Open
14	500.00	1.30	1.78	Open
15	500.00	1.30	1.78	Open
16	500.00	1.30	1.78	Open
17	500.00	1.30	1.78	Open
18	500.00	1.30	1.78	Open
19	500.00	1.30	1.78	Open
20	500.00	1.30	1.78	Open
21	500.00	1.30	1.78	Open
22	500.00	1.30	1.78	Open
23	500.00	1.30	1.78	Open
24	500.00	1.30	1.78	Open
25	500.00	1.30	1.78	Open
26	500.00	1.30	1.78	Open
27	500.00	1.30	1.78	Open
28	500.00	1.30	1.78	Open
29	500.00	1.30	1.78	Open
30	500.00	1.30	1.78	Open
31	500.00	1.30	1.78	Open
32	500.00	1.30	1.78	Open
33	500.00	1.30	1.78	Open
34	500.00	1.30	1.78	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
35	500.00	1.30	1.78	Open
36	500.00	1.30	1.78	Open
37	500.00	1.30	1.78	Open
38	500.00	1.30	1.78	Open
39	500.00	1.30	1.78	Open
40	500.00	1.30	1.78	Open
41	500.00	1.30	1.78	Open
42	500.00	1.30	1.78	Open
43	500.00	1.30	1.78	Open
44	500.00	1.30	1.78	Open
45	500.00	1.30	1.78	Open
46	500.00	1.30	1.78	Open
47	500.00	1.30	1.78	Open
48	400.00	1.21	1.69	Open
49	400.00	1.21	1.69	Open
50	400.00	1.21	1.69	Open
51	400.00	1.21	1.69	Open
52	400.00	1.21	1.69	Open
53	400.00	1.21	1.69	Open
54	400.00	1.21	1.69	Open
55	400.00	1.21	1.69	Open
56	400.00	1.21	1.69	Open
57	400.00	1.21	1.69	Open
58	400.00	1.21	1.69	Open
59	400.00	1.21	1.69	Open
60	400.00	1.21	1.69	Open
61	400.00	1.21	1.69	Open
62	400.00	1.21	1.69	Open
63	400.00	1.21	1.69	Open
64	400.00	1.21	1.69	Open
65	400.00	1.21	1.69	Open
66	400.00	1.21	1.69	Open
67	400.00	1.21	1.69	Open
68	400.00	1.21	1.69	Open
69	400.00	1.21	1.69	Open
70	400.00	1.21	1.69	Open
71	400.00	1.21	1.69	Open
72	400.00	1.21	1.69	Open
73	400.00	1.21	1.69	Open
74	400.00	1.21	1.69	Open
75	400.00	1.21	1.69	Open
76	400.00	1.21	1.69	Open
77	400.00	1.21	1.69	Open
78	400.00	1.21	1.69	Open
79	400.00	1.21	1.69	Open
80	400.00	1.21	1.69	Open
81	400.00	1.21	1.69	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
82	400.00	1.21	1.69	Open
83	400.00	1.21	1.69	Open
84	400.00	1.21	1.69	Open
85	400.00	1.21	1.69	Open
86	400.00	1.21	1.69	Open
87	400.00	1.21	1.69	Open
88	400.00	1.21	1.69	Open
89	400.00	1.21	1.69	Open
90	400.00	1.21	1.69	Open
91	400.00	1.21	1.69	Open
92	400.00	1.21	1.69	Open
93	400.00	1.21	1.69	Open
94	400.00	1.21	1.69	Open
95	400.00	1.21	1.69	Open
96	400.00	1.21	1.69	Open
97	400.00	1.21	1.69	Open
98	400.00	1.21	1.69	Open
99	400.00	1.21	1.69	Open
100	400.00	1.21	1.69	Open
101	400.00	1.21	1.69	Open
102	400.00	1.21	1.69	Open
103	400.00	1.21	1.69	Open
104	400.00	1.21	1.69	Open
105	400.00	1.21	1.69	Open
106	400.00	1.21	1.69	Open
107	400.00	1.21	1.69	Open
108	400.00	1.21	1.69	Open
109	400.00	1.21	1.69	Open
110	400.00	1.21	1.69	Open
111	400.00	1.21	1.69	Open
112	400.00	1.21	1.69	Open
113	400.00	1.21	1.69	Open
114	400.00	1.21	1.69	Open
127	300.00	1.06	1.47	Open
128	300.00	1.06	1.46	Open
129	300.00	1.06	1.46	Open
130	300.00	1.06	1.46	Open
131	300.00	1.06	1.46	Open
132	300.00	1.06	1.46	Open
133	300.00	1.06	1.46	Open
134	300.00	1.06	1.46	Open
135	300.00	1.06	1.46	Open
136	300.00	1.06	1.46	Open
137	300.00	1.06	1.46	Open
138	300.00	1.06	1.46	Open
139	300.00	1.06	1.46	Open
140	300.00	1.06	1.46	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
141	300.00	1.06	1.46	Open
142	300.00	1.06	1.46	Open
143	300.00	1.06	1.46	Open
144	300.00	1.06	1.46	Open
145	300.00	1.06	1.46	Open
146	300.00	1.06	1.46	Open
147	300.00	1.06	1.46	Open
148	300.00	1.06	1.46	Open
149	300.00	1.06	1.47	Open
150	300.00	1.06	1.46	Open
151	300.00	1.06	1.46	Open
152	300.00	1.06	1.46	Open
153	300.00	1.06	1.46	Open
154	300.00	1.06	1.46	Open
155	300.00	1.06	1.46	Open
156	300.00	1.06	1.46	Open
157	300.00	1.06	1.46	Open
158	300.00	1.06	1.46	Open
159	300.00	1.06	1.46	Open
160	300.00	1.06	1.46	Open
161	300.00	1.06	1.46	Open
162	300.00	1.06	1.46	Open
163	300.00	1.06	1.46	Open
164	300.00	1.06	1.46	Open
165	300.00	1.06	1.46	Open
166	300.00	1.06	1.46	Open
167	300.00	1.06	1.46	Open
168	300.00	1.06	1.47	Open
169	300.00	1.06	1.46	Open
170	300.00	1.06	1.46	Open
171	300.00	1.06	1.46	Open
172	300.00	1.06	1.46	Open
173	300.00	1.06	1.46	Open
174	300.00	1.06	1.46	Open
175	300.00	1.06	1.46	Open
176	300.00	1.06	1.46	Open
177	300.00	1.06	1.46	Open
178	300.00	1.06	1.46	Open
179	300.00	1.06	1.46	Open
180	300.00	1.06	1.46	Open
181	200.00	0.71	0.69	Open
182	200.00	0.71	0.69	Open
183	200.00	0.71	0.69	Open
184	200.00	0.71	0.69	Open
185	200.00	0.71	0.69	Open
186	200.00	0.71	0.69	Open
187	200.00	0.71	0.69	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
188	200.00	0.71	0.69	Open
189	200.00	0.71	0.69	Open
190	200.00	0.71	0.69	Open
191	200.00	0.71	0.69	Open
192	200.00	0.71	0.69	Open
193	200.00	0.71	0.69	Open
194	200.00	0.71	0.69	Open
195	200.00	0.71	0.69	Open
196	200.00	0.71	0.69	Open
197	200.00	0.71	0.69	Open
200	200.00	0.71	0.69	Open
201	200.00	0.71	0.69	Open
202	200.00	0.71	0.69	Open
203	200.00	0.71	0.69	Open
204	200.00	0.71	0.69	Open
205	200.00	0.71	0.69	Open
206	200.00	0.71	0.69	Open
207	200.00	0.71	0.69	Open
208	100.00	0.80	1.38	Open
209	100.00	0.80	1.38	Open
210	100.00	0.80	1.38	Open
211	100.00	0.80	1.38	Open
212	100.00	0.80	1.38	Open
213	100.00	0.80	1.38	Open
214	100.00	0.80	1.38	Open
215	100.00	0.80	1.38	Open
115	400.00	1.21	1.69	Open
116	400.00	1.21	1.69	Open
117	400.00	1.21	1.69	Open
118	400.00	1.21	1.69	Open
119	400.00	1.21	1.69	Open
120	400.00	1.21	1.69	Open
121	400.00	1.21	1.69	Open
122	400.00	1.21	1.69	Open
123	400.00	1.21	1.69	Open
124	400.00	1.21	1.69	Open
125	400.00	1.21	1.69	Open
126	300.00	1.06	1.46	Open
S1	100.00	0.80	1.38	Open
S2	100.00	0.80	1.38	Open
S3	100.00	0.80	1.38	Open
S4	100.00	0.80	1.38	Open
S5	100.00	0.80	1.38	Open
S6	100.00	0.80	1.38	Open
S7	100.00	0.80	1.38	Open
S8	100.00	0.80	1.38	Open
S9	100.00	0.80	1.38	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
S10	100.00	0.80	1.38	Open
S11	100.00	0.80	1.38	Open
199	200.00	0.71	0.69	Open
198	200.00	0.71	0.69	Open
47a	100.00	0.80	1.41	Open
125a	100.00	0.80	1.34	Open
216	100.00	0.80	1.34	Open
0	500.00	1.30	1.79	Open

LAMPIRAN 7

ANALISIS EPANET

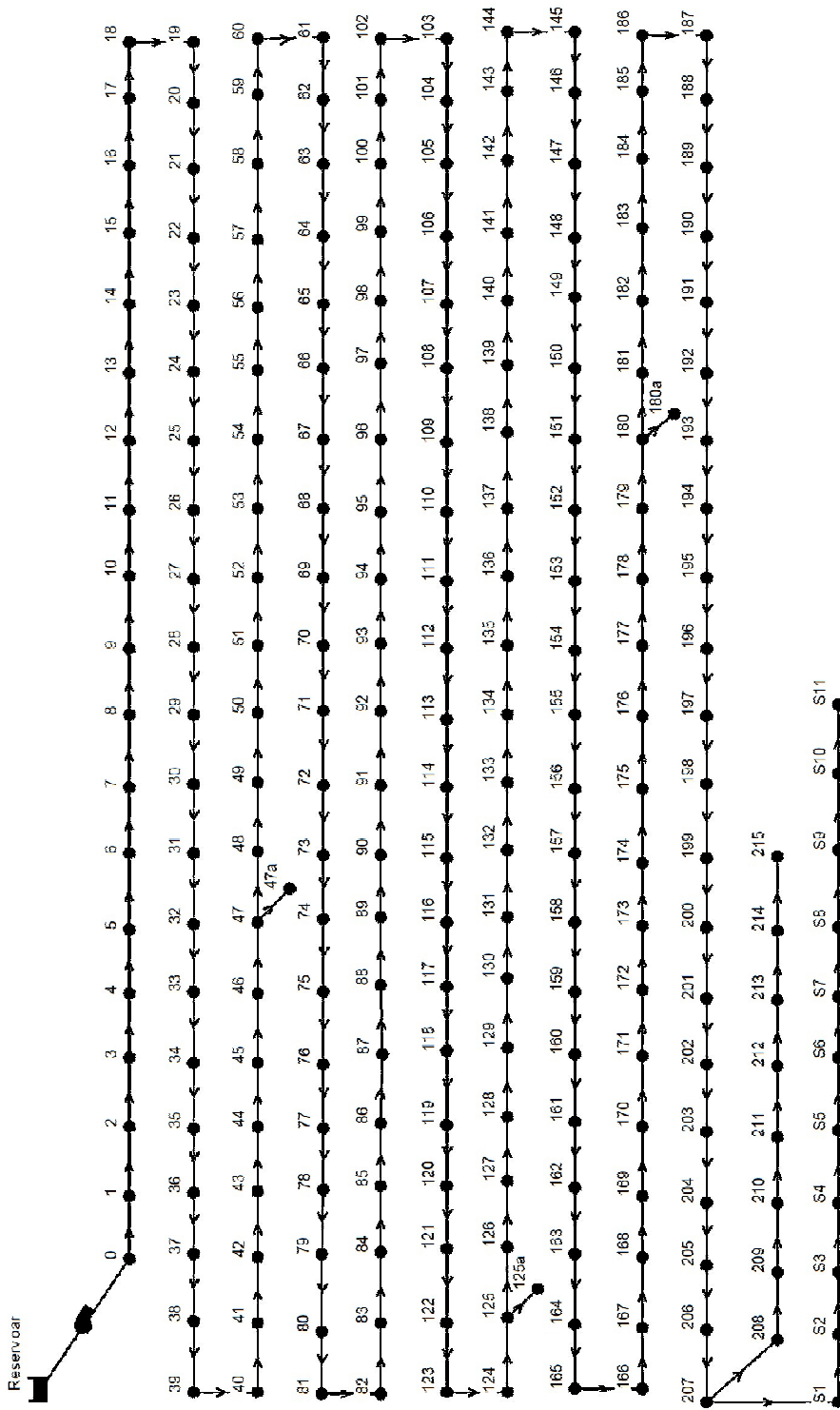
PADA PENGEMBANGAN TAHAP V

SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

(DENGAN POMPA)

Day 1, 12:00 AM



Page 1 1/25/2007 10:06:35 PM

* E P A N E T *
 * Hydraulic and Water Quality *
 * Analysis for Pipe Networks *
 * Version 2 *

Input File: final 1.NET

Link - Node Table:

 Link Start End Length Diameter
 ID Node Node m mm

1	0	1	57	700
2	1	2	30	700
3	2	3	101	700
4	3	4	50	700
5	4	5	50	700
6	5	6	50	700
7	6	7	50	700
8	7	8	30	700
9	8	9	40	700
10	9	10	30	700
11	10	11	60	700
12	11	12	90	700
13	12	13	48	700
14	13	14	50	700
15	14	15	50	700
16	15	16	50	700
17	16	17	50	700
18	17	18	50	700
19	18	19	100	700
20	19	20	50	700
21	20	21	50	700
22	21	22	50	700
23	22	23	71	700
24	23	24	68	700
25	24	25	101	700
26	25	26	69	700
27	26	27	50	700
28	27	28	50	700
29	28	29	89	700
30	29	30	50	700
31	30	31	54	700
32	31	32	84	700
33	32	33	100	700
34	33	34	66	700
35	34	35	56	700
36	35	36	46	700
37	36	37	105	700

Page 2
 Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
38	37	38	90	700
39	38	39	100	700
40	39	40	100	700
41	40	41	43	700
42	41	42	80	700
43	42	43	65	700
44	43	44	48	700
45	44	45	58	700
46	45	46	67	700
47	46	47	60	700
47a	47	47a	1	400
48	47	48	27	650
49	48	49	67	650
50	49	50	110	650
51	50	51	100	650
52	51	52	100	650
53	52	53	101	650
54	53	54	100	650
55	54	55	89	650
56	55	56	100	650
57	56	57	81	650
58	57	58	88	650
59	58	59	85	650
60	59	60	60	650
61	60	61	100	650
62	61	62	100	650
63	62	63	100	650
64	63	64	101	650
65	64	65	100	650
66	65	66	100	650
67	66	67	104	650
68	67	68	82	650
69	68	69	100	650
70	69	70	100	650
71	70	71	100	650
72	71	72	100	650
73	72	73	100	650
74	73	74	112	650
75	74	75	81	650
76	75	76	100	650
77	76	77	100	650
78	77	78	70	650
79	78	79	55	650
80	79	80	100	650
81	80	81	100	650
82	81	82	105	650
83	82	83	107	650
84	83	84	32	650

Page 3

Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
---------	------------	----------	----------	-------------

85	84	85	150	650
86	85	86	110	650
87	86	87	92	650
88	87	88	58	650
89	88	89	100	650
90	89	90	50	650
91	90	91	60	650
92	91	92	100	650
93	92	93	97	650
94	93	94	111	650
95	94	95	100	650
96	95	96	103	650
97	96	97	100	650
98	97	98	100	650
99	98	99	96	650
100	99	100	92	650
101	100	101	107	650
102	101	102	86	650
103	102	103	46	650
104	103	104	102	650
105	104	105	100	650
106	105	106	44	650
107	106	107	100	650
108	107	108	100	650
109	108	109	98	650
110	109	110	95	650
111	110	111	62	650
112	111	112	95	650
113	112	113	50	650
114	113	114	42	650
115	114	115	41	650
116	115	116	96	650
117	116	117	50	650
118	117	118	51	650
119	118	119	64	650
120	119	120	101	650
121	120	121	100	650
122	121	122	58	650
123	122	123	56	650
124	123	124	58	650
125	124	125	65	650
125a	125	125a	1	400
126	125	126	26	600
127	126	127	18	600
128	127	128	50	600
129	128	129	100	600
130	129	130	100	600
131	130	131	100	600
132	131	132	100	600
133	132	133	100	600

Page 4
 Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
134	133	134	100	600
135	134	135	100	600
136	135	136	100	600
137	136	137	100	600
138	137	138	100	600
139	138	139	101	600
140	139	140	100	600
141	140	141	100	600
142	141	142	99	600
143	142	143	100	600
144	143	144	100	600
145	144	145	100	600
146	145	146	90	600
147	146	147	100	600
148	147	148	48	600
149	148	149	30	600
150	149	150	73	600
151	150	151	71	600
152	151	152	56	600
153	152	153	100	600
154	153	154	100	600
155	154	155	100	600
156	155	156	100	600
157	156	157	100	600
158	157	158	100	600
159	158	159	100	600
160	159	160	101	600
161	160	161	100	600
162	161	162	100	600
163	162	163	102	600
164	163	164	100	600
165	164	165	100	600
166	165	166	98	600
167	166	167	100	600
168	167	168	52	600
169	168	169	64	600
170	169	170	65	600
171	170	171	63	600
172	171	172	50	600
173	172	173	50	600
174	173	174	31	600
175	174	175	50	600
176	175	176	55	600
177	176	177	100	600
178	177	178	100	600
179	178	179	100	600
180	179	180	94	600
180a	180	180a	1	400
181	180	181	66	600
182	181	182	43	600

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 Link - Node Table: (continued)

Link ID	Start Node	End Node	Length m	Diameter mm
183	182	183	50	600
184	183	184	100	600
185	184	185	50	600
186	185	186	32	600
187	186	187	87	600
188	187	188	87	600
189	188	189	53	600
190	189	190	50	600
191	190	191	50	600
192	191	192	100	600
193	192	193	100	600
194	193	194	100	600
195	194	195	100	600
196	195	196	76	600
197	196	197	100	600
198	197	198	100	600
199	198	199	62	600
200	199	200	58	600
201	200	201	100	600
202	201	202	100	600
203	202	203	72	600
204	203	204	92	600
205	204	205	100	600
206	205	206	87	600
207	206	207	56	600
208	207	208	51	400
209	208	209	51	400
210	209	210	50	400
211	210	211	86	400
212	211	212	100	400
213	212	213	101	400
214	213	214	87	400
215	214	215	100	400
S1	207	S1	60	400
S2	S1	S2	63	400
S3	S2	S3	44	400
S4	S3	S4	73	400
S5	S4	S5	50	400
S6	S5	S6	50	400
S7	S6	S7	50	400
S8	S7	S8	50	400
S9	S8	S9	50	400
S10	S9	S10	50	400
S11	S10	S11	40	400

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Link - Node Table: (continued)

```

-----
Link  Start  End  Length Diameter
ID   Node   Node m      mm
-----
pompa Reservoar  0      #N/A  #N/A  Pump

```

Energy Usage:

```

-----
Usage Avg.   Kw-hr  Avg.   Peak   Cost
Pump  Factor Effic. /m3   Kw     Kw     /day
-----
pompa 100    75     0.31  555.46 555.46 0
-----

```

Demand Charge: 0
Total Cost: 0

Node Results:

```

-----
Node  Demand Head  Pressure  Quality
ID    LPS    m        m
-----
1     0      819.94 89.61    0
2     0      819.89 89.57    0
3     0      819.71 91.55    0
4     0      819.62 93.85    0
5     0      819.53 95.26    0
6     0      819.44 98.98    0
7     0      819.35 102.27 0
8     0      819.3   103.07 0
9     0      819.22 102.54 0
10    0      819.17 100.63 0
11    0      819.06 100.3   0
12    0      818.9   104.29 0
13    0      818.82 110.3   0
14    0      818.73 109.28 0
15    0      818.64 105.52 0
16    0      818.55 103.76 0
17    0      818.46 104.15 0
18    0      818.37 104.47 0
19    0      818.2   104.05 0
20    0      818.11 105.14 0
21    0      818.02 106.62 0
22    0      817.93 110.33 0
23    0      817.8   113.46 0
24    0      817.68 117.09 0
25    0      817.5   115.78 0
26    0      817.38 113.56 0

```

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 Node Results: (continued)

```

-----
Node  Demand Head  Pressure  Quality
ID    LPS    m      m
-----
27    0      817.29 113.49 0
28    0      817.2   116.79 0
29    0      817.04 117.48 0
30    0      816.95 118.8   0
31    0      816.86 117.35 0
32    0      816.71 115.84 0
33    0      816.53 117.03 0
34    0      816.41 116.22 0
35    0      816.31 116.95 0
36    0      816.23 117.75 0
37    0      816.04 117.52 0
38    0      815.88 122.71 0
39    0      815.71 122.55 0
40    0      815.53 120.34 0
41    0      815.45 121.98 0
42    0      815.31 120.95 0
43    0      815.19 127.1   0
44    0      815.11 127.98 0
45    0      815     127.87 0
46    0      814.89 125.42 0
47    0      814.78 123.32 0
48    0      814.73 122.5   0
49    0      814.62 121.21 0
50    0      814.43 122.74 0
51    0      814.26 123.47 0
52    0      814.1   122.34 0
53    0      813.93 121.97 0
54    0      813.76 122.07 0
55    0      813.61 123.98 0
56    0      813.44 125.4   0
57    0      813.3   126.95 0
58    0      813.15 126.67 0
59    0      813.01 127.64 0
60    0      812.91 126.82 0
61    0      812.74 128.43 0
62    0      812.57 129.7   0
63    0      812.4   129.64 0
64    0      812.23 130.99 0
65    0      812.06 131.51 0
66    0      811.89 131.66 0
67    0      811.72 130.92 0
68    0      811.58 133.12 0
69    0      811.41 132.95 0
70    0      811.24 132.65 0
71    0      811.07 132.97 0
72    0      810.9   133.1   0
73    0      810.73 134.58 0
  
```

Page 8
 Node Results: (continued)

```

-----
Node   Demand Head   Pressure   Quality
ID     LPS      m         m
-----
74     0         810.54 135.23 0
75     0         810.41 136.44 0
76     0         810.24 136.26 0
77     0         810.07 136.43 0
78     0         809.95 136.25 0
79     0         809.86 136.59 0
80     0         809.69 136.69 0
81     0         809.52 136.53 0
82     0         809.34 135.15 0
83     0         809.16 136.14 0
84     0         809.11 135.88 0
85     0         808.85 136.17 0
86     0         808.67 137.53 0
87     0         808.51 136.58 0
88     0         808.41 136.29 0
89     0         808.25 138.01 0
90     0         808.16 136.83 0
91     0         808.06 135.76 0
92     0         807.89 136.76 0
93     0         807.73 135.72 0
94     0         807.54 136.91 0
95     0         807.37 135.89 0
96     0         807.2   136.94 0
97     0         807.03 136.79 0
98     0         806.86 138.55 0
99     0         806.7   139.38 0
100    0         806.54 138.02 0
101    0         806.36 137.79 0
102    0         806.21 136.41 0
103    0         806.14 136.66 0
104    0         805.96 135.29 0
105    0         805.8   136.25 0
106    0         805.72 135.06 0
107    0         805.55 136.08 0
108    0         805.38 134.81 0
109    0         805.22 134.38 0
110    0         805.06 134.4   0
111    0         804.95 134.4   0
112    0         804.79 135.12 0
113    0         804.71 134.23 0
114    0         804.64 134.84 0
115    0         804.57 136     0
116    0         804.41 135.89 0
117    0         804.32 135.6   0
118    0         804.24 135.93 0
119    0         804.13 134.89 0
120    0         803.96 132.7   0
  
```

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 Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
121	0	803.79	133.31	0
122	0	803.69	132.06	0
123	0	803.59	131.58	0
124	0	803.5	131.37	0
125	0	803.39	132.09	0
126	0	803.35	131.02	0
127	0	803.32	132.08	0
128	0	803.25	132.13	0
129	0	803.1	131.17	0
130	0	802.96	130.82	0
131	0	802.81	131.13	0
132	0	802.66	129.43	0
133	0	802.52	128.5	0
134	0	802.37	128.18	0
135	0	802.22	128.23	0
136	0	802.08	130.08	0
137	0	801.93	128.66	0
138	0	801.79	128.09	0
139	0	801.64	127	0
140	0	801.49	127.51	0
141	0	801.34	126.37	0
142	0	801.2	124.89	0
143	0	801.05	124.9	0
144	0	800.91	123.11	0
145	0	800.76	122.66	0
146	0	800.63	123.04	0
147	0	800.48	121.57	0
148	0	800.41	120.95	0
149	0	800.37	120.57	0
150	0	800.26	119.03	0
151	0	800.16	118.61	0
152	0	800.07	118.83	0
153	0	799.93	117.17	0
154	0	799.78	115.91	0
155	0	799.64	115.33	0
156	0	799.49	113.4	0
157	0	799.34	113.97	0
158	0	799.2	112.72	0
159	0	799.05	112.7	0
160	0	798.9	110.86	0
161	0	798.76	109.13	0
162	0	798.61	106.92	0
163	0	798.46	106.5	0
164	0	798.31	106.55	0
165	0	798.17	106.38	0
166	0	798.02	105.33	0
167	0	797.88	104.47	0

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 Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality
168	0	797.8	105.57	0
169	0	797.71	106.25	0
170	0	797.61	96.14	0
171	0	797.52	97.94	0
172	0	797.45	99.32	0
173	0	797.37	98.28	0
174	0	797.33	94.97	0
175	0	797.25	91.38	0
176	0	797.17	91.98	0
177	0	797.03	91.87	0
178	0	796.88	92.71	0
179	0	796.73	87.21	0
180	0	796.6	139.54	0
181	0	796.55	87.07	0
182	0	796.52	81.16	0
183	0	796.49	79.99	0
184	0	796.42	79.55	0
185	0	796.38	80.81	0
186	0	796.36	82.21	0
187	0	796.3	80.74	0
188	0	796.24	78.83	0
189	0	796.2	75.4	0
190	0	796.17	76.35	0
191	0	796.14	78.42	0
192	0	796.07	78.48	0
193	0	796	74.66	0
194	0	795.93	71.33	0
195	0	795.86	68.46	0
196	0	795.81	67.84	0
197	0	795.74	66.59	0
198	0	795.67	60.77	0
199	0	795.63	59.32	0
200	0	795.58	60.79	0
201	0	795.52	61.4	0
202	0	795.45	64	0
203	0	795.4	61.88	0
204	0	795.33	60.72	0
205	0	795.26	55.5	0
206	0	795.2	56.66	0
207	0	795.17	57.49	0
208	0	795.1	57.87	0
209	0	795.02	56.94	0
210	0	794.96	53.36	0
211	0	794.84	50.57	0
212	0	794.7	47.93	0
213	0	794.56	45.4	0
214	0	794.44	44.12	0

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Node Results: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality	
215	100	794.3	41.97	0	
S1	0	795.08	57.62	0	
S2	0	795	57.06	0	
S3	0	794.94	56.64	0	
S4	0	794.83	55.98	0	
S5	0	794.77	55.78	0	
S6	0	794.7	55.61	0	
S7	0	794.63	55.43	0	
S8	0	794.56	55.25	0	
S9	0	794.49	55.07	0	
S10	0	794.42	54.7	0	
S11	100	794.37	54.56	0	
0	0	820.04	85.18	0	
47a	100	814.78	123.32	0	
125a	100	803.39	132.09	0	
180a	100	796.6	139.54	0	
Reservoar		-500	735.04	0	Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	500	1.3	1.78	Open
2	500	1.3	1.78	Open
3	500	1.3	1.78	Open
4	500	1.3	1.78	Open
5	500	1.3	1.78	Open
6	500	1.3	1.78	Open
7	500	1.3	1.78	Open
8	500	1.3	1.78	Open
9	500	1.3	1.78	Open
10	500	1.3	1.78	Open
11	500	1.3	1.78	Open
12	500	1.3	1.78	Open
13	500	1.3	1.78	Open
14	500	1.3	1.78	Open
15	500	1.3	1.78	Open
16	500	1.3	1.78	Open
17	500	1.3	1.78	Open
18	500	1.3	1.78	Open
19	500	1.3	1.78	Open
20	500	1.3	1.78	Open
21	500	1.3	1.78	Open
22	500	1.3	1.78	Open
23	500	1.3	1.78	Open
24	500	1.3	1.78	Open

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 Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
25	500	1.3	1.78	Open
26	500	1.3	1.78	Open
27	500	1.3	1.78	Open
28	500	1.3	1.78	Open
29	500	1.3	1.78	Open
30	500	1.3	1.78	Open
31	500	1.3	1.78	Open
32	500	1.3	1.78	Open
33	500	1.3	1.78	Open
34	500	1.3	1.78	Open
35	500	1.3	1.78	Open
36	500	1.3	1.78	Open
37	500	1.3	1.78	Open
38	500	1.3	1.78	Open
39	500	1.3	1.78	Open
40	500	1.3	1.78	Open
41	500	1.3	1.78	Open
42	500	1.3	1.78	Open
43	500	1.3	1.78	Open
44	500	1.3	1.78	Open
45	500	1.3	1.78	Open
46	500	1.3	1.78	Open
47	500	1.3	1.78	Open
48	400	1.21	1.69	Open
49	400	1.21	1.69	Open
50	400	1.21	1.69	Open
51	400	1.21	1.69	Open
52	400	1.21	1.69	Open
53	400	1.21	1.69	Open
54	400	1.21	1.69	Open
55	400	1.21	1.69	Open
56	400	1.21	1.69	Open
57	400	1.21	1.69	Open
58	400	1.21	1.69	Open
59	400	1.21	1.69	Open
60	400	1.21	1.69	Open
61	400	1.21	1.69	Open
62	400	1.21	1.69	Open
63	400	1.21	1.69	Open
64	400	1.21	1.69	Open
65	400	1.21	1.69	Open
66	400	1.21	1.69	Open
67	400	1.21	1.69	Open
68	400	1.21	1.69	Open
69	400	1.21	1.69	Open
70	400	1.21	1.69	Open
71	400	1.21	1.69	Open

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 Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
72	400	1.21	1.69	Open
73	400	1.21	1.69	Open
74	400	1.21	1.69	Open
75	400	1.21	1.69	Open
76	400	1.21	1.69	Open
77	400	1.21	1.69	Open
78	400	1.21	1.69	Open
79	400	1.21	1.69	Open
80	400	1.21	1.69	Open
81	400	1.21	1.69	Open
82	400	1.21	1.69	Open
83	400	1.21	1.69	Open
84	400	1.21	1.69	Open
85	400	1.21	1.69	Open
86	400	1.21	1.69	Open
87	400	1.21	1.69	Open
88	400	1.21	1.69	Open
89	400	1.21	1.69	Open
90	400	1.21	1.69	Open
91	400	1.21	1.69	Open
92	400	1.21	1.69	Open
93	400	1.21	1.69	Open
94	400	1.21	1.69	Open
95	400	1.21	1.69	Open
96	400	1.21	1.69	Open
97	400	1.21	1.69	Open
98	400	1.21	1.69	Open
99	400	1.21	1.69	Open
100	400	1.21	1.69	Open
101	400	1.21	1.69	Open
102	400	1.21	1.69	Open
103	400	1.21	1.69	Open
104	400	1.21	1.69	Open
105	400	1.21	1.69	Open
106	400	1.21	1.69	Open
107	400	1.21	1.69	Open
108	400	1.21	1.69	Open
109	400	1.21	1.69	Open
110	400	1.21	1.69	Open
111	400	1.21	1.69	Open
112	400	1.21	1.69	Open
113	400	1.21	1.69	Open
114	400	1.21	1.69	Open
127	300	1.06	1.47	Open
128	300	1.06	1.46	Open
129	300	1.06	1.46	Open
130	300	1.06	1.46	Open

Page 14
 Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
131	300	1.06	1.46	Open
132	300	1.06	1.46	Open
133	300	1.06	1.46	Open
134	300	1.06	1.46	Open
135	300	1.06	1.46	Open
136	300	1.06	1.46	Open
137	300	1.06	1.46	Open
138	300	1.06	1.46	Open
139	300	1.06	1.46	Open
140	300	1.06	1.46	Open
141	300	1.06	1.46	Open
142	300	1.06	1.46	Open
143	300	1.06	1.46	Open
144	300	1.06	1.46	Open
145	300	1.06	1.46	Open
146	300	1.06	1.46	Open
147	300	1.06	1.46	Open
148	300	1.06	1.46	Open
149	300	1.06	1.47	Open
150	300	1.06	1.46	Open
151	300	1.06	1.46	Open
152	300	1.06	1.46	Open
153	300	1.06	1.46	Open
154	300	1.06	1.46	Open
155	300	1.06	1.46	Open
156	300	1.06	1.46	Open
157	300	1.06	1.46	Open
158	300	1.06	1.46	Open
159	300	1.06	1.46	Open
160	300	1.06	1.46	Open
161	300	1.06	1.46	Open
162	300	1.06	1.46	Open
163	300	1.06	1.46	Open
164	300	1.06	1.46	Open
165	300	1.06	1.46	Open
166	300	1.06	1.46	Open
167	300	1.06	1.46	Open
168	300	1.06	1.47	Open
169	300	1.06	1.46	Open
170	300	1.06	1.46	Open
171	300	1.06	1.46	Open
172	300	1.06	1.46	Open
173	300	1.06	1.46	Open
174	300	1.06	1.46	Open
175	300	1.06	1.46	Open
176	300	1.06	1.46	Open
177	300	1.06	1.46	Open

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 Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
178	300	1.06	1.46	Open
179	300	1.06	1.46	Open
180	300	1.06	1.46	Open
181	200	0.71	0.69	Open
182	200	0.71	0.69	Open
183	200	0.71	0.69	Open
184	200	0.71	0.69	Open
185	200	0.71	0.69	Open
186	200	0.71	0.69	Open
187	200	0.71	0.69	Open
188	200	0.71	0.69	Open
189	200	0.71	0.69	Open
190	200	0.71	0.69	Open
191	200	0.71	0.69	Open
192	200	0.71	0.69	Open
193	200	0.71	0.69	Open
194	200	0.71	0.69	Open
195	200	0.71	0.69	Open
196	200	0.71	0.69	Open
197	200	0.71	0.69	Open
200	200	0.71	0.69	Open
201	200	0.71	0.69	Open
202	200	0.71	0.69	Open
203	200	0.71	0.69	Open
204	200	0.71	0.69	Open
205	200	0.71	0.69	Open
206	200	0.71	0.69	Open
207	200	0.71	0.69	Open
208	100	0.8	1.38	Open
209	100	0.8	1.38	Open
210	100	0.8	1.38	Open
211	100	0.8	1.38	Open
212	100	0.8	1.38	Open
213	100	0.8	1.38	Open
214	100	0.8	1.38	Open
215	100	0.8	1.38	Open
115	400	1.21	1.69	Open
116	400	1.21	1.69	Open
117	400	1.21	1.69	Open
118	400	1.21	1.69	Open
119	400	1.21	1.69	Open
120	400	1.21	1.69	Open
121	400	1.21	1.69	Open
122	400	1.21	1.69	Open
123	400	1.21	1.69	Open
124	400	1.21	1.69	Open
125	400	1.21	1.69	Open

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Link Results: (continued)

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
126	300	1.06	1.46	Open
S1	100	0.8	1.38	Open
S2	100	0.8	1.38	Open
S3	100	0.8	1.38	Open
S4	100	0.8	1.38	Open
S5	100	0.8	1.38	Open
S6	100	0.8	1.38	Open
S7	100	0.8	1.38	Open
S8	100	0.8	1.38	Open
S9	100	0.8	1.38	Open
S10	100	0.8	1.38	Open
S11	100	0.8	1.38	Open
199	200	0.71	0.69	Open
198	200	0.71	0.69	Open
47a	100	0.8	1.41	Open
125a	100	0.8	1.34	Open
216	100	0.8	1.34	Open
pompa	500	0	-85	Open Pump

LAMPIRAN 8
CONTOH PERHITUNGAN

Sebagai contoh perhitungan, digunakan analisis pada Pengembangan Tahap I Sistem Penyediaan Air Bersih Wilayah Soreang.

Adapun data-data yang diinput pada software EPANET versi 2.0 dari *Water Supply and Water Resources Division, National Risk Management Research Laboratory, U. S. Environmental Protection Agency, Cincinnati, Ohio* adalah sebagai berikut :

No. Pipa	Nodal		Panjang (m)	Diameter (mm)	Koefisien Hazen-Williams
	Awal	Akhir			
1	0	1	57	700	140
2	1	2	30	700	140
3	2	3	101	700	140
4	3	4	50	700	140
5	4	5	50	700	140
6	5	6	50	700	140
7	6	7	50	700	140
8	7	8	30	700	140
9	8	9	40	700	140
10	9	10	30	700	140
11	10	11	60	700	140
12	11	12	90	700	140
13	12	13	48	700	140
14	13	14	50	700	140
15	14	15	50	700	140
16	15	16	50	700	140
17	16	17	50	700	140
18	17	18	50	700	140
19	18	19	100	700	140
20	19	20	50	700	140
21	20	21	50	700	140
22	21	22	50	700	140
23	22	23	71	700	140
24	23	24	68	700	140
25	24	25	101	700	140
26	25	26	69	700	140
27	26	27	50	700	140
28	27	28	50	700	140
29	28	29	89	700	140
30	29	30	50	700	140
31	30	31	54	700	140

No. Pipa	Nodal		Panjang (m)	Diameter (mm)	Koefisien Hazen-Williams
	Awal	Akhir			
32	31	32	84	700	140
33	32	33	100	700	140
34	33	34	66	700	140
35	34	35	56	700	140
36	35	36	46	700	140
37	36	37	105	700	140
38	37	38	90	700	140
39	38	39	100	700	140
40	39	40	100	700	140
41	40	41	43	700	140
42	41	42	80	700	140
43	42	43	65	700	140
44	43	44	48	700	140
45	44	45	58	700	140
46	45	46	67	700	140
47	46	47	60	700	140
47a	47	47a	1	400	140
0	Reservoir	0	1	700	140

No.Nodal	Elevasi Dasar Pipa	Tipe Nodal	Debit (lt/dt)
Reservoir	+ 735.04	Simpul	0
0	+ 734.86	Simpul	0
1	+ 730.33	Simpul	0
2	+ 730.32	Simpul	0
3	+ 728.16	Simpul	0
4	+ 725.77	Simpul	0
5	+ 724.27	Simpul	0
6	+ 720.46	Simpul	0
7	+ 717.08	Simpul	0
8	+ 716.23	Simpul	0
9	+ 716.68	Simpul	0
10	+ 718.54	Simpul	0
11	+ 718.76	Simpul	0
12	+ 714.61	Simpul	0
13	+ 708.52	Simpul	0
14	+ 709.45	Simpul	0
15	+ 713.12	Simpul	0
16	+ 714.79	Simpul	0
17	+ 714.31	Simpul	0
18	+ 713.90	Simpul	0
19	+ 714.15	Simpul	0

No.Nodal	Elevasi Dasar Pipa	Tipe Nodal	Debit (lt/dt)
20	+ 712.97	Simpul	0
21	+ 711.40	Simpul	0
22	+ 707.60	Simpul	0
23	+ 704.34	Simpul	0
24	+ 700.59	Simpul	0
25	+ 701.72	Simpul	0
26	+ 703.82	Simpul	0
27	+ 703.80	Simpul	0
28	+ 700.41	Simpul	0
29	+ 699.56	Simpul	0
30	+ 698.15	Simpul	0
31	+ 699.51	Simpul	0
32	+ 700.87	Simpul	0
33	+ 699.50	Simpul	0
34	+ 700.19	Simpul	0
35	+ 699.36	Simpul	0
36	+ 698.48	Simpul	0
37	+ 698.52	Simpul	0
38	+ 693.17	Simpul	0
39	+ 693.16	Simpul	0
40	+ 695.19	Simpul	0
41	+ 693.47	Simpul	0
42	+ 694.36	Simpul	0
43	+ 688.09	Simpul	0
44	+ 687.13	Simpul	0
45	+ 687.13	Simpul	0
46	+ 689.47	Simpul	0
47	+ 691.46	Simpul & Pengeluaran	100

Dari data-data di atas dapat dilakukan perhitungan sebagai berikut :

1. Kecepatan

$$V = \frac{\sum Q}{A}$$

Pada Pipa 1 :

$$V = \frac{100/1000}{\frac{1}{4} \cdot \pi \cdot (0.07)^2} = 0.26 \text{ m/dt}$$

2. Kehilangan Energi

$$h_f = \frac{10.68 \cdot L \cdot Q^{1.852}}{C_{HW}^{1.825} \cdot D^{4.87}}$$

Pada Pipa 1 :

$$h_f = \frac{10.68 \cdot 57 \cdot \left(\frac{100}{1000}\right)^{1.852}}{140^{1.825} \cdot 0.07^{4.87}} = 0.005 \text{ m} \quad \text{atau} \quad \frac{0.005}{57} \cdot 1000 = 0.09 \text{ m/km}$$

3. Tekanan

$$h_i = z_0 - z_i - \sum_0^i h_f$$

Pada Pipa 1 :

$$h = 735.04 - 730.33 - 0.005 = 4.70 \text{ m}$$

4. Tinggi Tekan

$$H_i = H_{(i-1)} - h_i$$

Pada Pipa 1 :

$$H = 735.04 - 0.005 = 735.03 \text{ m}$$

Dari perhitungan yang dilakukan terhadap semua data di atas diperoleh hasil sebagai berikut :

Nodal	Elevasi	L (m)	D (mm)	Q _{Kumulatif} (lt/dt)	V (m/dt)	h _f (m)	h _r (m/km)	Tekanan (m)	Tinggi Tekan (m)
0	734.9	1	700	100	0.26	0.000	0.09	0.18	735.04
1	730.3	57	700	100	0.26	0.005	0.09	4.70	735.03
2	730.3	30	700	100	0.26	0.003	0.09	4.71	735.03
3	728.2	101	700	100	0.26	0.009	0.09	6.86	735.02
4	725.8	50	700	100	0.26	0.005	0.09	9.25	735.02
5	724.3	50	700	100	0.26	0.005	0.09	10.74	735.01
6	720.5	50	700	100	0.26	0.005	0.09	14.55	735.01
7	717.1	50	700	100	0.26	0.005	0.09	17.92	735.00
8	716.2	30	700	100	0.26	0.003	0.09	18.77	735.00
9	716.7	40	700	100	0.26	0.004	0.09	18.32	735.00
10	718.5	30	700	100	0.26	0.003	0.09	16.46	735.00
11	718.8	60	700	100	0.26	0.005	0.09	16.23	734.99
12	714.6	90	700	100	0.26	0.008	0.09	20.37	734.98
13	708.5	48	700	100	0.26	0.004	0.09	26.46	734.98
14	709.5	50	700	100	0.26	0.005	0.09	25.52	734.97
15	713.1	50	700	100	0.26	0.005	0.09	21.85	734.97
16	714.8	50	700	100	0.26	0.005	0.09	20.17	734.96
17	714.3	50	700	100	0.26	0.005	0.09	20.65	734.96
18	713.9	50	700	100	0.26	0.005	0.09	21.06	734.96
19	714.2	100	700	100	0.26	0.009	0.09	20.80	734.95
20	713	50	700	100	0.26	0.005	0.09	21.97	734.94
21	711.4	50	700	100	0.26	0.005	0.09	23.54	734.94
22	707.6	50	700	100	0.26	0.005	0.09	27.33	734.93
23	704.3	71	700	100	0.26	0.006	0.09	30.59	734.93
24	700.6	68	700	100	0.26	0.006	0.09	34.33	734.92
25	701.7	101	700	100	0.26	0.009	0.09	33.19	734.91
26	703.8	69	700	100	0.26	0.006	0.09	31.08	734.90
27	703.8	50	700	100	0.26	0.005	0.09	31.10	734.90
28	700.4	50	700	100	0.26	0.005	0.09	34.49	734.90
29	699.6	89	700	100	0.26	0.008	0.09	35.33	734.89
30	698.2	50	700	100	0.26	0.005	0.09	36.73	734.88
31	699.5	54	700	100	0.26	0.005	0.09	35.37	734.88
32	700.9	84	700	100	0.26	0.008	0.09	34.00	734.87
33	699.5	100	700	100	0.26	0.009	0.09	35.36	734.86
34	700.2	66	700	100	0.26	0.006	0.09	34.67	734.86

Nodal	Elevasi	L (m)	D (mm)	Q_{Kumulatif} (lt/dt)	V (m/dt)	h_f (m)	h_f (m/km)	Tekanan (m)	Tinggi Tekan (m)
35	699.4	56	700	100	0.26	0.005	0.09	35.49	734.85
36	698.5	46	700	100	0.26	0.004	0.09	36.37	734.85
37	698.5	105	700	100	0.26	0.009	0.09	36.32	734.84
38	693.2	90	700	100	0.26	0.008	0.09	41.66	734.83
39	693.2	100	700	100	0.26	0.009	0.09	41.66	734.82
40	695.2	100	700	100	0.26	0.009	0.09	39.62	734.81
41	693.5	43	700	100	0.26	0.004	0.09	41.34	734.81
42	694.4	80	700	100	0.26	0.007	0.09	40.44	734.80
43	688.1	65	700	100	0.26	0.006	0.09	46.70	734.79
44	687.1	48	700	100	0.26	0.004	0.09	47.66	734.79
45	687.1	58	700	100	0.26	0.005	0.09	47.65	734.78
46	689.5	67	700	100	0.26	0.006	0.09	45.31	734.78
47	691.5	60	700	100	0.26	0.005	0.09	43.31	734.77
47a	691.5	60	400	100	0.80	0.083	1.38	43.23	734.69

LAMPIRAN 9

PETA SISTEM PENYEDIAAN AIR BERSIH

WILAYAH SOREANG

