

HYDRAULIC CALCULATIONS

for

YAĞ RAFİNERİ A.Ş.

Contract No.

Date January 21, 2020

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Design Data:

Remote Area Location	
Occupancy Classification	YÜKSEK TEHLİKE
Density	5.50 lpm/sq.m
Remote Area Size	373.3 sq.m
Coverageper Sprinkler	7.5 sq.m
Sprinkler K-Factor	varies
No. of Sprinkler Calculated	41
In-Rack Demand	0.0 lpm
Source Hose Demand	1500.0 lpm
Total Water Including Hose	6947.4 lpm
Name of Contractor	
Name of Designer	Deka Mühendislik
Address	,
Authority Having Jurisdiction	

GENERAL RESULTS

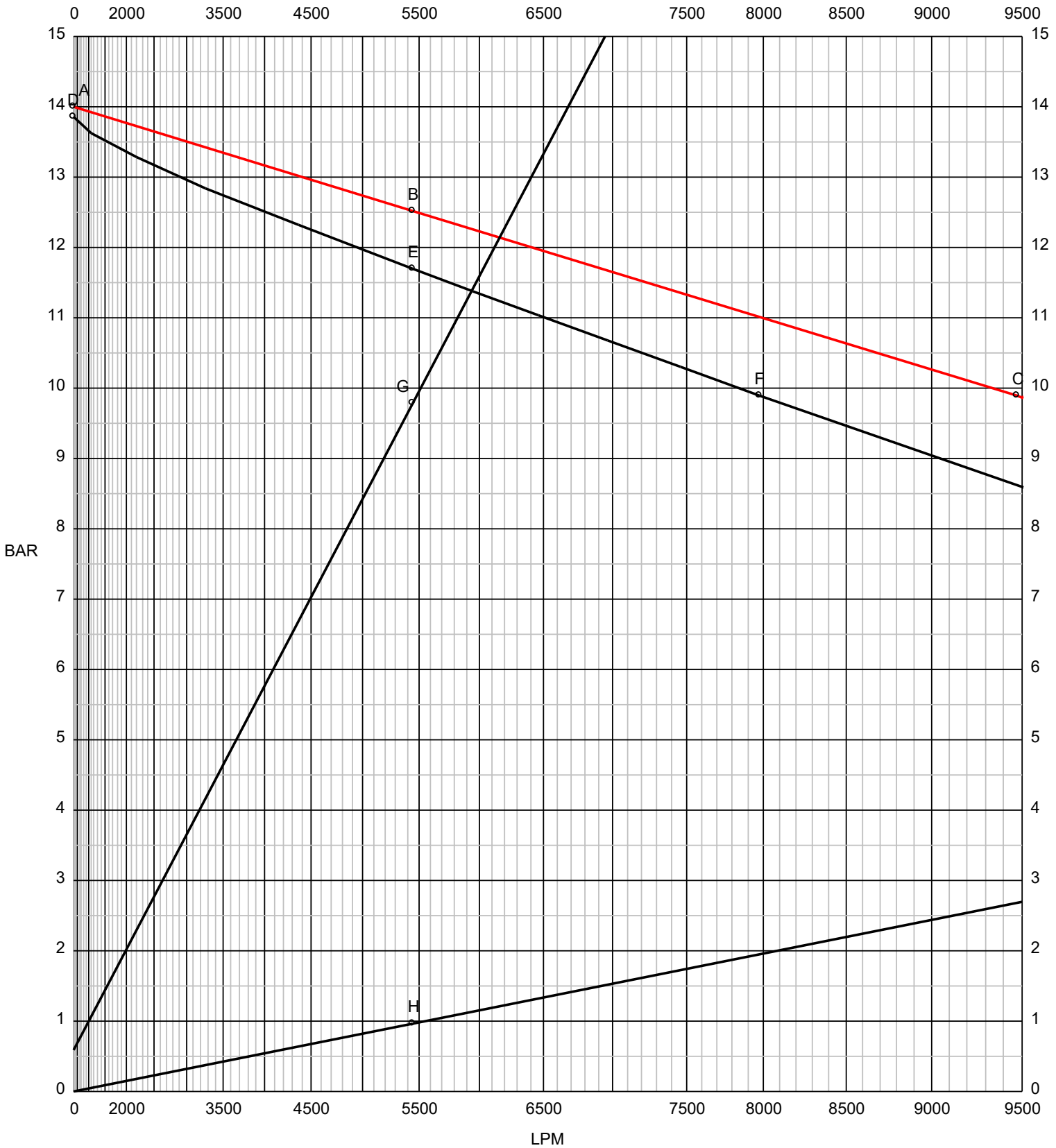
Total Water Including Hose	6947.4 lpm
Additional Allowances	0.0 lpm
Discharge from Sprinklers	5467.9 lpm
Source Hose Demand	1500.0 lpm
Average Imbalance	0.780 lpm
Maximum Imbalance	37.9 lpm
Maximum Velocity @ Pipe: 35	6.7 m/s
Maximum Fr. Loss @ Pipe: 73	0.096 bar/m
Average Density	14.65 lpm/sq.m
Remote Area was not Peaked	

Velocity pressures have been used for information only, and are not valid for balancing the system.

SOURCE : 42

Static Pressure	14.0 bar
Residual Pressure	9.9 bar
Flow	9470.0 lpm
Hose Allowance	1500.0 lpm
Available Pressure	11.7 bar
Required Pressure	9.8 bar
Safety Factor	16.4%, 1.9 bar
Water Flowing	5447.4 lpm

Water Curves for Src : 42



Curve	Values - X: bar @ lpm
Supply Curve@ Src : 42	A : 14 @ 0 - B : 12,5 @ 5447,4 - C : 9,9 @ 9470
Supply Curvewith Hose @ Src : 42	D : 13,9 @ 0 - E : 11,7 @ 5447,4 - F : 9,9 @ 7970
Demand Curve@ Src : 42	0,6 @ 0 - G : 9,8 @ 5447,4
End Head Pressure Responce	0 @ 0 - H : 1 @ 5447,4

NODES							
#	Type	Value	Elevation	X	Y	Res. Pres.	Discharge
			m	m	m	bar	lpm
42	Src	[...]	1.0	200.5	203.0	9.8	1500.0
1	Head	42.00	7.0	56.2	140.1	2.6	68.3
2	Head	42.00	7.0	56.2	143.1	2.7	69.3
3	Head	42.00	7.0	56.2	146.1	3.0	72.6
4	Head	42.00	7.0	56.2	149.1	3.1	73.5
5	Head	42.00	7.0	56.2	152.1	3.2	75.0
43	Head	42.00	7.0	58.7	140.1	2.7	68.4
44	Head	42.00	7.0	58.7	143.1	2.7	69.4
45	Head	42.00	7.0	58.7	146.1	3.0	72.7
46	Head	42.00	7.0	58.7	149.1	3.1	73.6
47	Head	42.00	7.0	58.7	152.1	3.2	75.1
48	Head	42.00	7.0	61.2	140.1	2.7	68.7
49	Head	42.00	7.0	61.2	143.1	2.7	69.6
50	Head	42.00	7.0	61.2	146.1	3.0	73.0
51	Head	42.00	7.0	61.2	149.1	3.1	73.8
52	Head	42.00	7.0	61.2	152.1	3.2	75.3
53	Head	42.00	7.0	63.7	140.1	2.7	69.3
54	Head	42.00	7.0	63.7	143.1	2.8	70.2
55	Head	42.00	7.0	63.7	146.1	3.1	73.6
56	Head	42.00	7.0	63.7	149.1	3.1	74.5
57	Head	42.00	7.0	63.7	152.1	3.3	76.0
58	Head	42.00	7.0	66.2	140.1	2.7	69.5
59	Head	42.00	7.0	66.2	143.1	2.8	70.5
60	Head	42.00	7.0	66.2	146.1	3.1	73.8
61	Head	42.00	7.0	66.2	149.1	3.2	74.7
62	Head	42.00	7.0	66.2	152.1	3.3	76.3
63	Head	42.00	7.0	68.7	140.1	2.8	69.9
64	Head	42.00	7.0	68.7	143.1	2.8	70.9
65	Head	42.00	7.0	68.7	146.1	3.1	74.3
66	Head	42.00	7.0	68.7	149.1	3.2	75.1
67	Head	42.00	7.0	68.7	152.1	3.3	76.7
68	Head	42.00	7.0	71.2	140.1	2.8	70.5
69	Head	42.00	7.0	71.2	143.1	2.9	71.4
70	Head	42.00	7.0	71.2	146.1	3.2	74.8
71	Head	42.00	7.0	71.2	149.1	3.3	75.7
72	Head	42.00	7.0	71.2	152.1	3.4	77.3
73	Head	42.00	7.0	73.7	140.1	2.9	71.2
74	Head	42.00	7.0	73.7	143.1	3.0	72.2
75	Head	42.00	7.0	73.7	146.1	3.2	75.6
76	Head	42.00	7.0	73.7	149.1	3.3	76.5
77	Head	42.00	7.0	73.7	152.1	3.5	78.1
78	Head	1078.00	2.0	52.7	99.0	5.6	2551.1
6	Node	-	7.0	56.2	154.3	3.2	-
7	Node	-	7.0	58.7	154.3	3.2	-
8	Node	-	7.0	61.2	154.3	3.3	-
9	Node	-	7.0	63.7	154.3	3.3	-
10	Node	-	7.0	66.2	154.3	3.3	-
11	Node	-	7.0	68.7	154.3	3.4	-
12	Node	-	7.0	71.2	154.3	3.4	-
13	Node	-	7.0	73.7	154.3	3.5	-
14	Node	-	7.0	74.8	154.3	3.5	-
15	Node	-	7.0	77.8	156.5	3.7	-
16	Node	-	1.5	77.9	156.5	4.4	-
17	Node	-	1.5	82.3	156.5	4.6	-
18	Node	-	1.5	100.2	138.8	5.5	-
19	Node	-	1.5	118.5	138.8	6.2	-
20	Node	-	1.5	118.5	142.7	6.3	-
21	Node	-	1.5	136.0	142.7	6.9	-
22	Node	-	0.5	136.0	142.7	7.2	-
23	Node	-	0.5	137.0	142.7	7.2	-
24	Node	-	0.5	138.0	142.7	7.2	-
25	Node	-	0.5	139.0	142.7	7.2	-
26	Node	-	0.5	140.0	142.7	7.2	-

NODES							
#	Type	Value	Elevation	X	Y	Res. Pres.	Discharge
			m	m	m	bar	lpm
27	Node	-	0.5	141.0	142.7	7.2	-
28	Node	-	0.5	142.0	142.7	7.2	-
29	Node	-	0.5	143.0	142.7	7.2	-
30	Node	-	0.5	144.0	142.7	7.2	-
31	Node	-	0.5	145.0	142.7	7.2	-
32	Node	-	0.5	146.5	142.7	7.3	-
33	Node	-	-1.5	146.5	142.7	7.5	-
34	Node	-	-1.5	152.0	142.7	7.6	-
35	Node	-	-1.5	152.0	184.0	8.2	-
36	Node	-	-1.5	157.0	184.0	8.3	-
37	Node	-	-1.5	201.0	184.0	9.5	-
38	Node	-	-1.5	201.0	199.0	9.9	-
39	Node	-	1.0	201.0	199.0	9.7	-
40	Node	-	1.0	201.0	200.0	9.7	-
41	Node	-	1.0	200.5	200.0	9.7	-
79	Node	-	-1.5	52.7	99.0	6.2	-
80	Node	-	-1.5	102.7	99.0	6.6	-
81	Node	-	-1.5	152.0	99.0	7.0	-
82	Node	-	-1.5	152.0	141.7	7.4	-
83	Node	-	-1.5	146.4	141.7	7.4	-
84	Node	-	0.5	146.4	141.7	7.3	-
85	Node	-	0.0	43.6	256.8	9.8	-
86	Node	-	-1.0	43.6	256.8	9.9	-
87	Node	-	-1.0	-9.7	252.4	9.9	-
88	Node	-	-1.0	-31.4	233.4	9.9	-
89	Node	-	-1.0	-28.0	230.0	9.9	-
90	Node	-	-1.0	-1.0	230.0	9.9	-
91	Node	-	-1.0	12.7	230.0	9.9	-
92	Node	-	-1.0	62.7	230.0	9.9	-
93	Node	-	-1.0	112.4	230.0	9.9	-
94	Node	-	-1.0	157.0	230.0	9.9	-
95	Node	-	-1.0	157.0	184.6	9.9	-
96	Node	-	-1.0	200.0	184.6	9.9	-
97	Node	-	-1.0	200.0	199.0	9.9	-
98	Node	-	1.0	200.0	199.0	9.7	-
99	Node	-	1.0	200.0	200.0	9.7	-
100	Node	-	0.0	-1.6	259.6	9.8	-
101	Node	-	-1.0	-1.6	259.6	9.9	-
102	Node	-	7.0	55.7	154.3	3.2	-
103	Node	-	2.0	9.3	121.0	6.6	-
104	Node	-	-1.5	9.3	121.0	6.9	-
105	Node	-	-1.5	31.7	99.0	6.5	-
106	Node	-	-1.5	-3.2	133.2	7.2	-
107	Node	-	-1.5	15.0	151.0	7.5	-
108	Node	-	-1.5	0.8	163.0	7.8	-
109	Node	-	0.5	0.8	163.0	7.6	-
110	Node	-	0.5	1.0	184.0	7.7	-
111	Node	-	-1.5	1.0	184.0	7.9	-
112	Node	-	-1.5	12.0	184.0	7.9	-
113	Node	-	-1.5	62.0	184.0	8.0	-
114	Node	-	-1.5	112.0	184.0	8.1	-
115	Node	-	-1.5	142.6	184.0	8.2	-
116	Node	-	0.0	9.3	120.5	9.8	-
117	Node	-	-1.0	9.3	120.5	9.9	-
118	Node	-	-1.0	31.7	98.7	9.9	-
119	Node	-	-1.0	52.2	98.7	9.9	-
120	Node	-	-1.0	102.2	98.7	9.9	-
121	Node	-	-1.0	152.2	98.7	9.9	-
122	Node	-	-1.0	152.5	98.7	9.9	-
123	Node	-	-1.0	200.7	98.7	9.9	-
124	Node	-	-1.0	201.7	98.7	9.9	-
125	Node	-	-1.0	201.7	118.3	9.9	-
126	Node	-	-1.0	201.6	161.3	9.9	-

NODES							
#	Type	Value	Elevation	X	Y	Res. Pres.	Discharge
			m	m	m	bar	lpm
127	Node	-	-1.0	201.5	184.6	9.9	-
128	Node	-	0.5	140.0	143.5	9.8	-
129	Node	-	0.5	141.0	143.5	9.8	-
130	Node	-	0.5	142.0	143.5	9.8	-
131	Node	-	0.5	143.0	143.5	9.8	-
132	Node	-	0.5	144.0	143.5	9.8	-
133	Node	-	0.5	145.0	143.5	9.8	-
134	Node	-	0.5	146.9	143.5	9.8	-
135	Node	-	0.5	146.9	142.4	9.8	-
136	Node	-	-1.0	146.9	142.4	9.9	-
137	Node	-	-1.0	152.5	142.4	9.9	-
138	Node	-	-1.0	152.5	184.6	9.9	-
139	Node	-	2.0	102.7	99.0	6.3	-
140	Node	-	-1.0	-3.2	132.7	9.9	-
141	Node	-	-1.0	15.0	150.5	9.9	-
142	Node	-	-1.0	1.5	163.6	9.9	-
143	Node	-	0.5	1.5	163.6	9.8	-
144	Node	-	0.5	1.7	184.6	9.8	-
145	Node	-	-1.0	1.7	184.6	9.9	-
146	Node	-	-1.0	10.7	184.6	9.9	-
147	Node	-	-1.0	60.7	184.6	9.9	-
148	Node	-	-1.0	110.7	184.6	9.9	-
149	Node	-	0.0	52.2	98.7	9.8	-
150	Node	-	0.0	102.2	98.7	9.8	-
151	Node	-	0.0	152.2	98.7	9.8	-
152	Node	-	2.0	13.3	237.4	8.0	-
153	Node	-	-1.5	13.3	237.4	8.3	-
154	Node	-	-1.5	13.3	230.0	8.3	-
155	Node	-	-1.5	63.3	230.0	8.3	-
156	Node	-	-1.5	113.0	230.0	8.3	-
157	Node	-	-1.5	157.0	230.0	8.3	-
158	Node	-	2.0	12.0	184.0	7.5	-
159	Node	-	-1.0	152.5	141.4	9.9	-
160	Node	-	0.0	12.7	237.0	9.8	-
161	Node	-	-1.0	12.7	237.0	9.9	-
162	Node	-	-1.0	-1.0	184.6	9.9	-
163	Node	-	-1.0	146.9	141.4	9.9	-
164	Node	-	0.5	146.9	141.4	9.8	-
165	Node	-	2.0	63.3	237.4	8.0	-
166	Node	-	-1.5	63.3	237.4	8.3	-
167	Node	-	2.0	62.0	184.0	7.6	-
168	Node	-	0.0	200.7	98.7	9.8	-
169	Node	-	0.0	62.7	237.0	9.8	-
170	Node	-	-1.0	62.7	237.0	9.9	-
171	Node	-	0.0	10.7	184.6	9.8	-
172	Node	-	2.0	113.0	237.4	8.0	-
173	Node	-	-1.5	113.0	237.4	8.3	-
174	Node	-	2.0	152.2	236.0	8.0	-
175	Node	-	-1.5	152.2	236.0	8.3	-
176	Node	-	-1.5	157.0	236.0	8.3	-
177	Node	-	2.0	112.0	184.0	7.8	-
178	Node	-	0.0	112.4	237.0	9.8	-
179	Node	-	-1.0	112.4	237.0	9.9	-
180	Node	-	0.0	178.2	236.0	9.8	-
181	Node	-	-1.0	178.2	236.0	9.9	-
182	Node	-	-1.0	157.0	236.0	9.9	-
183	Node	-	0.0	60.7	184.6	9.8	-
184	Node	-	2.0	142.6	184.0	7.8	-
185	Node	-	0.0	201.7	118.3	9.8	-
186	Node	-	0.0	110.7	184.6	9.8	-
187	Node	-	0.0	201.6	161.3	9.8	-
188	Node	-	-1.0	201.5	199.0	9.9	-
189	Node	-	1.0	201.5	199.0	9.7	-

NODES							
#	Type	Value	Elevation	X	Y	Res. Pres.	Discharge
			m	m	m	bar	lpm
190	Node	-	1.0	201.5	200.0	9.7	-

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
41	42	Src	[...]	1.0	9.8	1500.0	Sch40	10	3.0	0.001	0.033	5485.2	1.8	Feed Main
	41	Node	-	1.0	9.7	-	120 BS	253.807 257.259	22.6 25.6		0.000 0.015			
1	1	Head	42.00	7.0	2.6	68.3	Sch40	1	3.0	0.024	0.073	-68.3	2.0	Branch Line
	2	Head	42.00	7.0	2.7	69.3	120	25.381	0.0		0.000			
							-	26.624	3.0		0.021			
2	2	Head	42.00	7.0	2.7	69.3	Sch40	1	3.0	0.089	0.266	-137.6	4.1	Branch Line
	3	Head	42.00	7.0	3.0	72.6	120	25.381	0.0		0.000			
							-	26.624	3.0		0.084			
3	3	Head	42.00	7.0	3.0	72.6	Sch40	1-1/2	3.0	0.024	0.072	-210.2	2.7	Branch Line
	4	Head	42.00	7.0	3.1	73.5	120	38.071	0.0		0.000			
							-	40.863	3.0		0.036			
4	4	Head	42.00	7.0	3.1	73.5	Sch40	1-1/2	3.0	0.042	0.126	-283.7	3.6	Branch Line
	5	Head	42.00	7.0	3.2	75.0	120	38.071	0.0		0.000			
							-	40.863	3.0		0.065			
5	5	Head	42.00	7.0	3.2	75.0	Sch40	2	2.2	0.019	0.042	-358.7	2.8	Branch Line
	6	Node	-	7.0	3.2	-	120	50.761	0.0		0.000			
							-	52.462	2.2		0.038			
42	43	Head	42.00	7.0	2.7	68.4	Sch40	1	3.0	0.024	0.073	-68.4	2.0	Branch Line
	44	Head	42.00	7.0	2.7	69.4	120	25.381	0.0		0.000			
							-	26.624	3.0		0.021			
43	44	Head	42.00	7.0	2.7	69.4	Sch40	1	3.0	0.089	0.267	-137.8	4.1	Branch Line
	45	Head	42.00	7.0	3.0	72.7	120	25.381	0.0		0.000			
							-	26.624	3.0		0.085			
44	45	Head	42.00	7.0	3.0	72.7	Sch40	1-1/2	3.0	0.024	0.073	-210.5	2.7	Branch Line
	46	Head	42.00	7.0	3.1	73.6	120	38.071	0.0		0.000			
							-	40.863	3.0		0.036			
45	46	Head	42.00	7.0	3.1	73.6	Sch40	1-1/2	3.0	0.042	0.126	-284.0	3.6	Branch Line
	47	Head	42.00	7.0	3.2	75.1	120	38.071	0.0		0.000			
							-	40.863	3.0		0.065			
46	47	Head	42.00	7.0	3.2	75.1	Sch40	2	2.2	0.019	0.042	-359.1	2.8	Branch Line
	7	Node	-	7.0	3.2	-	120	50.761	0.0		0.000			
							-	52.462	2.2		0.038			
47	48	Head	42.00	7.0	2.7	68.7	Sch40	1	3.0	0.025	0.074	-68.7	2.1	Branch Line
	49	Head	42.00	7.0	2.7	69.6	120	25.381	0.0		0.000			
							-	26.624	3.0		0.021			
48	49	Head	42.00	7.0	2.7	69.6	Sch40	1	3.0	0.090	0.269	-138.3	4.1	Branch Line
	50	Head	42.00	7.0	3.0	73.0	120	25.381	0.0		0.000			
							-	26.624	3.0		0.085			
49	50	Head	42.00	7.0	3.0	73.0	Sch40	1-1/2	3.0	0.024	0.073	-211.3	2.7	Branch Line
	51	Head	42.00	7.0	3.1	73.8	120	38.071	0.0		0.000			
							-	40.863	3.0		0.036			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss bar/m	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow lpm	Velocity m/s	Type
	#	Type	Value	Elevation m	Res.Pres. bar	Discharge lpm								
50	51	Head	42.00	7.0	3.1	73.8	Sch40	1-1/2	3.0	0.043	0.127	-285.1	3.6	Branch Line
	52	Head	42.00	7.0	3.2	75.3	120		38.071	0.0	0.000			
							-	40.863	3.0		0.065			
51	52	Head	42.00	7.0	3.2	75.3	Sch40	2	2.2	0.019	0.042	-360.5	2.8	Branch Line
	8	Node	-	7.0	3.3	-	120		50.761	0.0	0.000			
							-	52.462	2.2		0.038			
52	53	Head	42.00	7.0	2.7	69.3	Sch40	1	3.0	0.025	0.075	-69.3	2.1	Branch Line
	54	Head	42.00	7.0	2.8	70.2	120		25.381	0.0	0.000			
							-	26.624	3.0		0.021			
53	54	Head	42.00	7.0	2.8	70.2	Sch40	1	3.0	0.091	0.273	-139.5	4.2	Branch Line
	55	Head	42.00	7.0	3.1	73.6	120		25.381	0.0	0.000			
							-	26.624	3.0		0.087			
54	55	Head	42.00	7.0	3.1	73.6	Sch40	1-1/2	3.0	0.025	0.074	-213.1	2.7	Branch Line
	56	Head	42.00	7.0	3.1	74.5	120		38.071	0.0	0.000			
							-	40.863	3.0		0.036			
55	56	Head	42.00	7.0	3.1	74.5	Sch40	1-1/2	3.0	0.043	0.129	-287.5	3.6	Branch Line
	57	Head	42.00	7.0	3.3	76.0	120		38.071	0.0	0.000			
							-	40.863	3.0		0.066			
56	57	Head	42.00	7.0	3.3	76.0	Sch40	2	2.2	0.020	0.043	-363.5	2.8	Branch Line
	9	Node	-	7.0	3.3	-	120		50.761	0.0	0.000			
							-	52.462	2.2		0.039			
57	58	Head	42.00	7.0	2.7	69.5	Sch40	1	3.0	0.025	0.075	-69.5	2.1	Branch Line
	59	Head	42.00	7.0	2.8	70.5	120		25.381	0.0	0.000			
							-	26.624	3.0		0.022			
58	59	Head	42.00	7.0	2.8	70.5	Sch40	1	3.0	0.092	0.275	-140.0	4.2	Branch Line
	60	Head	42.00	7.0	3.1	73.8	120		25.381	0.0	0.000			
							-	26.624	3.0		0.087			
59	60	Head	42.00	7.0	3.1	73.8	Sch40	1-1/2	3.0	0.025	0.075	-213.8	2.7	Branch Line
	61	Head	42.00	7.0	3.2	74.7	120		38.071	0.0	0.000			
							-	40.863	3.0		0.037			
60	61	Head	42.00	7.0	3.2	74.7	Sch40	1-1/2	3.0	0.043	0.130	-288.6	3.7	Branch Line
	62	Head	42.00	7.0	3.3	76.3	120		38.071	0.0	0.000			
							-	40.863	3.0		0.067			
61	62	Head	42.00	7.0	3.3	76.3	Sch40	2	2.2	0.020	0.043	-364.8	2.8	Branch Line
	10	Node	-	7.0	3.3	-	120		50.761	0.0	0.000			
							-	52.462	2.2		0.039			
62	63	Head	42.00	7.0	2.8	69.9	Sch40	1	3.0	0.025	0.076	-69.9	2.1	Branch Line
	64	Head	42.00	7.0	2.8	70.9	120		25.381	0.0	0.000			
							-	26.624	3.0		0.022			
63	64	Head	42.00	7.0	2.8	70.9	Sch40	1	3.0	0.093	0.278	-140.8	4.2	Branch Line
	65	Head	42.00	7.0	3.1	74.3	120		25.381	0.0	0.000			
							-	26.624	3.0		0.088			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
64	65	Head	42.00	7.0	3.1	74.3	Sch40	1-1/2	3.0	0.025	0.076	-215.1	2.7	Branch Line
	66	Head	42.00	7.0	3.2	75.1	120	38.071	0.0	0.000				
							-	40.863	3.0		0.037			
65	66	Head	42.00	7.0	3.2	75.1	Sch40	1-1/2	3.0	0.044	0.132	-290.2	3.7	Branch Line
	67	Head	42.00	7.0	3.3	76.7	120	38.071	0.0	0.000				
							-	40.863	3.0		0.068			
66	67	Head	42.00	7.0	3.3	76.7	Sch40	2	2.2	0.020	0.043	-366.9	2.8	Branch Line
	11	Node	-	7.0	3.4	-	120	50.761	0.0	0.000				
							-	52.462	2.2		0.040			
67	68	Head	42.00	7.0	2.8	70.5	Sch40	1	3.0	0.026	0.077	-70.5	2.1	Branch Line
	69	Head	42.00	7.0	2.9	71.4	120	25.381	0.0	0.000				
							-	26.624	3.0		0.022			
68	69	Head	42.00	7.0	2.9	71.4	Sch40	1	3.0	0.094	0.282	-141.9	4.2	Branch Line
	70	Head	42.00	7.0	3.2	74.8	120	25.381	0.0	0.000				
							-	26.624	3.0		0.090			
69	70	Head	42.00	7.0	3.2	74.8	Sch40	1-1/2	3.0	0.026	0.077	-216.7	2.7	Branch Line
	71	Head	42.00	7.0	3.3	75.7	120	38.071	0.0	0.000				
							-	40.863	3.0		0.038			
70	71	Head	42.00	7.0	3.3	75.7	Sch40	1-1/2	3.0	0.045	0.133	-292.5	3.7	Branch Line
	72	Head	42.00	7.0	3.4	77.3	120	38.071	0.0	0.000				
							-	40.863	3.0		0.069			
71	72	Head	42.00	7.0	3.4	77.3	Sch40	2	2.2	0.020	0.044	-369.8	2.8	Branch Line
	12	Node	-	7.0	3.4	-	120	50.761	0.0	0.000				
							-	52.462	2.2		0.040			
72	73	Head	42.00	7.0	2.9	71.2	Sch40	1	3.0	0.026	0.079	-71.2	2.1	Branch Line
	74	Head	42.00	7.0	3.0	72.2	120	25.381	0.0	0.000				
							-	26.624	3.0		0.023			
73	74	Head	42.00	7.0	3.0	72.2	Sch40	1	3.0	0.096	0.287	-143.4	4.3	Branch Line
	75	Head	42.00	7.0	3.2	75.6	120	25.381	0.0	0.000				
							-	26.624	3.0		0.092			
74	75	Head	42.00	7.0	3.2	75.6	Sch40	1-1/2	3.0	0.026	0.078	-219.0	2.8	Branch Line
	76	Head	42.00	7.0	3.3	76.5	120	38.071	0.0	0.000				
							-	40.863	3.0		0.039			
75	76	Head	42.00	7.0	3.3	76.5	Sch40	1-1/2	3.0	0.045	0.136	-295.5	3.7	Branch Line
	77	Head	42.00	7.0	3.5	78.1	120	38.071	0.0	0.000				
							-	40.863	3.0		0.070			
76	77	Head	42.00	7.0	3.5	78.1	Sch40	2	2.2	0.021	0.045	-373.6	2.9	Branch Line
	13	Node	-	7.0	3.5	-	120	50.761	0.0	0.000				
							-	52.462	2.2		0.041			
77	78	Head	1078.00	2.0	5.6	2551.1	HDPE	4	3.5	0.040	0.242	-2551.1	6.7	Underground
	79	Node	-	-1.5	6.2	-	140	101.523	2.7		0.343			
							B	90.000	6.2		0.222			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
				m	bar	lpm		m	bar/m	bar	lpm	m/s		
6	7	Node	-	7.0	3.2	-	Sch40	3	2.5	0.003	0.007	358.7	1.3	Feed Main
	6	Node	-	7.0	3.2	-	120	76.142	0.0	0.000	0.008			
7	8	Node	-	7.0	3.3	-	Sch40	3	2.5	0.010	0.025	717.7	2.5	Feed Main
	7	Node	-	7.0	3.2	-	120	76.142	0.0	0.000	0.031			
8	9	Node	-	7.0	3.3	-	Sch40	3	2.5	0.022	0.054	1078.2	3.8	Feed Main
	8	Node	-	7.0	3.3	-	120	76.142	0.0	0.000	0.071			
9	10	Node	-	7.0	3.3	-	Sch40	4	2.5	0.010	0.025	1441.7	2.9	Feed Main
	9	Node	-	7.0	3.3	-	120	101.523	0.0	0.000	0.043			
10	10	Node	-	7.0	3.3	-	Sch40	4	2.5	0.015	0.037	-1806.5	3.7	Feed Main
	11	Node	-	7.0	3.4	-	120	101.523	0.0	0.000	0.067			
11	11	Node	-	7.0	3.4	-	Sch40	4	2.5	0.021	0.052	-2173.4	4.4	Feed Main
	12	Node	-	7.0	3.4	-	120	101.523	0.0	0.000	0.097			
12	12	Node	-	7.0	3.4	-	Sch40	4	2.5	0.028	0.070	-2543.2	5.2	Feed Main
	13	Node	-	7.0	3.5	-	120	101.523	0.0	0.000	0.133			
13	14	Node	-	7.0	3.5	-	Sch40	4	1.1	0.036	0.040	2916.7	5.9	Feed Main
	13	Node	-	7.0	3.5	-	120	101.523	0.0	0.000	0.175			
14	14	Node	-	7.0	3.5	-	Sch40	4	3.7	0.036	0.134	-2916.7	5.9	Feed Main
	15	Node	-	7.0	3.7	-	120	101.523	0.0	0.000	0.175			
15	15	Node	-	7.0	3.7	-	Sch40	4	5.5	0.036	0.199	-2916.7	5.9	Feed Main
	16	Node	-	1.5	4.4	-	120	101.523	0.0	0.539	0.175			
16	17	Node	-	1.5	4.6	-	Sch40	4	4.4	0.036	0.159	2916.7	5.9	Feed Main
	16	Node	-	1.5	4.4	-	120	101.523	0.0	0.000	0.175			
17	17	Node	-	1.5	4.6	-	Sch40	4	25.2	0.036	0.910	-2916.7	5.9	Feed Main
	18	Node	-	1.5	5.5	-	120	101.523	0.0	0.000	0.175			
18	18	Node	-	1.5	5.5	-	Sch40	4	18.3	0.036	0.661	-2916.7	5.9	Feed Main
	19	Node	-	1.5	6.2	-	120	101.523	0.0	0.000	0.175			
19	19	Node	-	1.5	6.2	-	Sch40	4	3.9	0.036	0.141	-2916.7	5.9	Feed Main
	20	Node	-	1.5	6.3	-	120	101.523	0.0	0.000	0.175			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss bar/m	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow lpm	Velocity m/s	Type
	#	Type	Value	Elevation m	Res.Pres. bar	Discharge lpm								
20	20	Node	-	1.5	6.3	-	Sch40	4	17.5	0.036	0.632	-2916.7	5.9	Feed Main
	21	Node	-	1.5	6.9	-	120	101.523	0.0	0.000				
							-	102.183	17.5		0.175			
21	21	Node	-	1.5	6.9	-	Sch40	4	1.0	0.036	0.170	-2916.7	5.9	Feed Main
	22	Node	-	0.5	7.2	-	120	101.523	3.7		0.098			
							B	102.183	4.7		0.175			
22	22	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	23	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
23	23	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	24	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
24	24	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	25	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
25	25	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	26	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
26	26	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	27	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
27	27	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	28	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
28	28	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	29	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
29	29	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	30	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
30	30	Node	-	0.5	7.2	-	Sch40	6	1.0	0.005	0.005	-2916.7	2.6	Feed Main
	31	Node	-	0.5	7.2	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.034			
31	31	Node	-	0.5	7.2	-	Sch40	6	1.5	0.005	0.007	-2916.7	2.6	Feed Main
	32	Node	-	0.5	7.3	-	120	152.284	0.0		0.000			
							-	153.934	1.5		0.034			
83	32	Node	-	0.5	7.3	-	Sch40	6	1.0	0.001	0.001	1097.8	1.0	Feed Main
	84	Node	-	0.5	7.3	-	120	152.284	0.0		0.000			
							-	153.934	1.0		0.005			
32	32	Node	-	0.5	7.3	-	HDPE	6	2.0	0.015	0.056	-4012.1	5.0	Underground
	33	Node	-	-1.5	7.5	-	140	152.284	1.8		0.196			
							B	131.000	3.8		0.122			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
33	33	Node	-	-1.5	7.5	-	HDPE	6	5.5	0.015	0.080	-4012.1	5.0	Underground
	34	Node	-	-1.5	7.6	-	140	152.284	0.0	0.000				
							-	131.000	5.5	0.122				
34	34	Node	-	-1.5	7.6	-	HDPE	6	41.3	0.015	0.603	-4012.1	5.0	Underground
	35	Node	-	-1.5	8.2	-	140	152.284	0.0	0.000				
							-	131.000	41.3	0.122				
35	35	Node	-	-1.5	8.2	-	HDPE	6	5.0	0.026	0.129	-5467.9	6.7	Underground
	36	Node	-	-1.5	8.3	-	140	152.284	0.0	0.000				
							-	131.000	5.0	0.227				
36	36	Node	-	-1.5	8.3	-	HDPE	6	44.0	0.026	1.139	-5467.9	6.7	Underground
	37	Node	-	-1.5	9.5	-	140	152.284	0.0	0.000				
							-	131.000	44.0	0.227				
37	37	Node	-	-1.5	9.5	-	HDPE	6	15.0	0.026	0.388	-5467.9	6.7	Underground
	38	Node	-	-1.5	9.9	-	140	152.284	0.0	0.000				
							-	131.000	15.0	0.227				
38	38	Node	-	-1.5	9.9	-	HDPE	6	2.5	0.026	0.065	-5467.9	6.7	Underground
	39	Node	-	1.0	9.7	-	140	152.284	0.0	0.245				
							-	131.000	2.5	0.227				
39	39	Node	-	1.0	9.7	-	Sch40	6	1.0	0.016	0.063	-5467.9	4.9	Feed Main
	40	Node	-	1.0	9.7	-	120	152.284	3.0	0.000				
							B	153.934	4.0	0.119				
40	40	Node	-	1.0	9.7	-	Sch40	12	0.5	0.001	0.000	-5441.5	1.2	Feed Main
	41	Node	-	1.0	9.7	-	120	304.569	0.0	0.000				
							-	309.645	0.5	0.007				
98	41	Node	-	1.0	9.7	-	Sch40	12	0.5	0.000	0.000	-32.1	0.0	Feed Main
	99	Node	-	1.0	9.7	-	120	304.569	0.0	0.000				
							-	309.645	0.5	0.000				
104	79	Node	-	-1.5	6.2	-	HDPE	4	21.0	0.014	0.292	-1455.7	3.8	Underground
	105	Node	-	-1.5	6.5	-	140	101.523	0.0	0.000				
							-	90.000	21.0	0.072				
78	80	Node	-	-1.5	6.6	-	HDPE	4	50.0	0.008	0.411	1095.4	2.9	Underground
	79	Node	-	-1.5	6.2	-	140	101.523	0.0	0.000				
							-	90.000	50.0	0.041				
79	81	Node	-	-1.5	7.0	-	HDPE	4	49.3	0.008	0.406	1095.4	2.9	Underground
	80	Node	-	-1.5	6.6	-	140	101.523	0.0	0.000				
							-	90.000	49.3	0.041				
80	81	Node	-	-1.5	7.0	-	HDPE	4	42.7	0.008	0.351	-1095.4	2.9	Underground
	82	Node	-	-1.5	7.4	-	140	101.523	0.0	0.000				
							-	90.000	42.7	0.041				
81	83	Node	-	-1.5	7.4	-	HDPE	4	5.6	0.008	0.046	1095.4	2.9	Underground
	82	Node	-	-1.5	7.4	-	140	101.523	0.0	0.000				
							-	90.000	5.6	0.041				

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
82	84	Node	-	0.5	7.3	-	HDPE	4	2.0	0.008	0.038	1095.4	2.9	Underground
	83	Node	-	-1.5	7.4	-	140 B	101.523 90.000	2.7 4.7		0.196 0.041			
84	85	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	86	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 1.0		0.098 0.000			
85	86	Node	-	-1.0	9.9	-	HDPE	4	53.5	0.000	0.000	0.0	0.0	Underground
	87	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 53.5		0.000 0.000			
86	87	Node	-	-1.0	9.9	-	HDPE	4	28.8	0.000	0.000	0.0	0.0	Underground
	88	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 28.8		0.000 0.000			
87	88	Node	-	-1.0	9.9	-	HDPE	6	4.8	0.000	0.000	0.0	0.0	Underground
	89	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 4.8		0.000 0.000			
88	89	Node	-	-1.0	9.9	-	HDPE	6	27.0	0.000	0.000	0.0	0.0	Underground
	90	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 27.0		0.000 0.000			
89	90	Node	-	-1.0	9.9	-	HDPE	6	13.7	0.000	0.000	-0.4	0.0	Underground
	91	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 13.7		0.000 0.000			
90	91	Node	-	-1.0	9.9	-	HDPE	6	50.0	0.000	0.000	-0.4	0.0	Underground
	92	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 50.0		0.000 0.000			
91	92	Node	-	-1.0	9.9	-	HDPE	6	49.7	0.000	0.000	-0.4	0.0	Underground
	93	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 49.7		0.000 0.000			
92	93	Node	-	-1.0	9.9	-	HDPE	6	44.6	0.000	0.000	-0.4	0.0	Underground
	94	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 44.6		0.000 0.000			
93	94	Node	-	-1.0	9.9	-	HDPE	6	45.4	0.000	0.000	-0.4	0.0	Underground
	95	Node	-	-1.0	9.9	-	140 -	152.284 131.000	0.0 45.4		0.000 0.000			
94	95	Node	-	-1.0	9.9	-	HDPE	8	43.0	0.000	0.000	-2.5	0.0	Underground
	96	Node	-	-1.0	9.9	-	140 -	203.046 184.000	0.0 43.0		0.000 0.000			
95	96	Node	-	-1.0	9.9	-	HDPE	8	14.4	0.000	0.000	-32.1	0.0	Underground
	97	Node	-	-1.0	9.9	-	140 -	203.046 184.000	0.0 14.4		0.000 0.000			
96	97	Node	-	-1.0	9.9	-	HDPE	8	2.0	0.000	0.000	-32.1	0.0	Underground
	98	Node	-	1.0	9.7	-	140 -	203.046 184.000	0.0 2.0		0.196 0.000			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
97	98	Node	-	1.0	9.7	-	Sch40	8	1.0	0.000	0.000	-32.1	0.0	Feed Main
	99	Node	-	1.0	9.7	-	120 B	203.046 204.848	3.7 4.7		0.000 0.000			
99	100	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	101	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 1.0		0.098 0.000			
100	101	Node	-	-1.0	9.9	-	HDPE	4	10.8	0.000	0.000	0.0	0.0	Underground
	87	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 10.8		0.000 0.000			
101	102	Node	-	7.0	3.2	-	Sch40	3	0.5	0.000	0.000	-0.1	0.0	Feed Main
	6	Node	-	7.0	3.2	-	120 -	76.142 77.868	0.0 0.5		0.000 0.000			
102	103	Node	-	2.0	6.6	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	104	Node	-	-1.5	6.9	-	140 B	101.523 90.000	2.7 6.2		0.343 0.000			
105	104	Node	-	-1.5	6.9	-	HDPE	4	17.5	0.014	0.244	-1455.7	3.8	Underground
	106	Node	-	-1.5	7.2	-	140 -	101.523 90.000	0.0 17.5		0.000 0.072			
103	105	Node	-	-1.5	6.5	-	HDPE	4	31.4	0.014	0.437	-1455.7	3.8	Underground
	104	Node	-	-1.5	6.9	-	140 -	101.523 90.000	0.0 31.4		0.000 0.072			
106	106	Node	-	-1.5	7.2	-	HDPE	4	25.5	0.014	0.354	-1455.7	3.8	Underground
	107	Node	-	-1.5	7.5	-	140 -	101.523 90.000	0.0 25.5		0.000 0.072			
107	108	Node	-	-1.5	7.8	-	HDPE	4	18.6	0.014	0.259	1455.7	3.8	Underground
	107	Node	-	-1.5	7.5	-	140 -	101.523 90.000	0.0 18.6		0.000 0.072			
109	109	Node	-	0.5	7.6	-	Sch40	6	21.0	0.001	0.037	-1460.1	1.3	Feed Main
	110	Node	-	0.5	7.7	-	120 2B	152.284 153.934	6.0 27.0		0.000 0.009			
108	109	Node	-	0.5	7.6	-	HDPE	4	2.0	0.014	0.028	1455.7	3.8	Underground
	108	Node	-	-1.5	7.8	-	140 -	101.523 90.000	0.0 2.0		0.196 0.072			
110	110	Node	-	0.5	7.7	-	HDPE	6	2.0	0.002	0.004	-1455.7	1.8	Underground
	111	Node	-	-1.5	7.9	-	140 -	152.284 131.000	0.0 2.0		0.196 0.016			
111	111	Node	-	-1.5	7.9	-	HDPE	6	11.0	0.002	0.025	-1455.7	1.8	Underground
	112	Node	-	-1.5	7.9	-	140 -	152.284 131.000	0.0 11.0		0.000 0.016			
112	112	Node	-	-1.5	7.9	-	HDPE	6	50.0	0.002	0.112	-1455.7	1.8	Underground
	113	Node	-	-1.5	8.0	-	140 -	152.284 131.000	0.0 50.0		0.000 0.016			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
113	113	Node	-	-1.5	8.0	-	HDPE	6	50.0	0.002	0.112	-1455.7	1.8	Underground
	114	Node	-	-1.5	8.1	-	140	152.284	0.0	0.000				
							-	131.000	50.0	0.016				
114	114	Node	-	-1.5	8.1	-	HDPE	6	30.6	0.002	0.068	-1455.7	1.8	Underground
	115	Node	-	-1.5	8.2	-	140	152.284	0.0	0.000				
							-	131.000	30.6	0.016				
115	115	Node	-	-1.5	8.2	-	HDPE	6	9.4	0.002	0.021	-1455.7	1.8	Underground
	35	Node	-	-1.5	8.2	-	140	152.284	0.0	0.000				
							-	131.000	9.4	0.016				
116	116	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	117	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098				
							-	90.000	1.0	0.000				
140	117	Node	-	-1.0	9.9	-	HDPE	6	17.5	0.000	0.000	-0.9	0.0	Underground
	140	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	17.5	0.000				
117	118	Node	-	-1.0	9.9	-	HDPE	6	31.2	0.000	0.000	-0.9	0.0	Underground
	117	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	31.2	0.000				
118	119	Node	-	-1.0	9.9	-	HDPE	6	20.5	0.000	0.000	-0.9	0.0	Underground
	118	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	20.5	0.000				
119	120	Node	-	-1.0	9.9	-	HDPE	6	50.0	0.000	0.000	-0.9	0.0	Underground
	119	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	50.0	0.000				
120	121	Node	-	-1.0	9.9	-	HDPE	6	50.0	0.000	0.000	-0.9	0.0	Underground
	120	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	50.0	0.000				
121	122	Node	-	-1.0	9.9	-	HDPE	6	0.3	0.000	0.000	-0.9	0.0	Underground
	121	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	0.3	0.000				
160	122	Node	-	-1.0	9.9	-	HDPE	6	42.7	0.000	0.000	-1.6	0.0	Underground
	159	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	42.7	0.000				
122	123	Node	-	-1.0	9.9	-	HDPE	4	48.2	0.000	0.000	-2.5	0.0	Underground
	122	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	48.2	0.000				
123	124	Node	-	-1.0	9.9	-	HDPE	4	1.0	0.000	0.000	-2.5	0.0	Underground
	123	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	1.0	0.000				
124	124	Node	-	-1.0	9.9	-	HDPE	4	19.6	0.000	0.000	2.5	0.0	Underground
	125	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	19.6	0.000				

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss bar/m	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow lpm	Velocity m/s	Type
	#	Type	Value	Elevation m	Res.Pres. bar	Discharge lpm								
125	125	Node	-	-1.0	9.9	-	HDPE	4	43.0	0.000	0.000	2.5	0.0	Underground
	126	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	43.0	0.000				
126	126	Node	-	-1.0	9.9	-	HDPE	4	23.3	0.000	0.000	2.5	0.0	Underground
	127	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	23.3	0.000				
127	127	Node	-	-1.0	9.9	-	HDPE	4	1.5	0.000	0.000	-29.5	0.1	Underground
	96	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	1.5	0.000				
191	127	Node	-	-1.0	9.9	-	HDPE	4	14.4	0.000	0.000	32.1	0.1	Underground
	188	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000				
							-	90.000	14.4	0.000				
128	128	Node	-	0.5	9.8	-	Sch40	8	1.0	0.000	0.000	-0.9	0.0	Feed Main
	129	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.0	0.000				
129	129	Node	-	0.5	9.8	-	Sch40	8	1.0	0.000	0.000	-0.9	0.0	Feed Main
	130	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.0	0.000				
130	130	Node	-	0.5	9.8	-	Sch40	8	1.0	0.000	0.000	0.0	0.0	Feed Main
	131	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.0	0.000				
131	131	Node	-	0.5	9.8	-	Sch40	8	1.0	0.000	0.000	0.0	0.0	Feed Main
	132	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.0	0.000				
132	132	Node	-	0.5	9.8	-	Sch40	8	1.0	0.000	0.000	0.0	0.0	Feed Main
	133	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.0	0.000				
133	133	Node	-	0.5	9.8	-	Sch40	8	1.9	0.000	0.000	0.0	0.0	Feed Main
	134	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.9	0.000				
134	134	Node	-	0.5	9.8	-	Sch40	8	1.1	0.000	0.000	-0.9	0.0	Feed Main
	135	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.1	0.000				
167	135	Node	-	0.5	9.8	-	Sch40	8	1.0	0.000	0.000	-1.6	0.0	Feed Main
	164	Node	-	0.5	9.8	-	120	203.046	0.0	0.000				
							-	204.848	1.0	0.000				
135	135	Node	-	0.5	9.8	-	HDPE	6	1.5	0.000	0.000	-1.6	0.0	Underground
	136	Node	-	-1.0	9.9	-	140	152.284	1.8	0.147				
							B	131.000	3.3	0.000				
136	136	Node	-	-1.0	9.9	-	HDPE	6	5.6	0.000	0.000	-1.6	0.0	Underground
	137	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	5.6	0.000				

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
			m	bar	lpm			m	bar/m	bar	lpm	m/s		
137	137	Node	-	-1.0	9.9	-	HDPE	6	42.2	0.000	0.000	-1.6	0.0	Underground
	138	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	42.2		0.000			
138	138	Node	-	-1.0	9.9	-	HDPE	8	4.5	0.000	0.000	-2.1	0.0	Underground
	95	Node	-	-1.0	9.9	-	140	203.046	0.0	0.000				
							-	184.000	4.5		0.000			
149	138	Node	-	-1.0	9.9	-	HDPE	6	41.8	0.000	0.000	-0.5	0.0	Underground
	148	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	41.8		0.000			
139	139	Node	-	2.0	6.3	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	80	Node	-	-1.5	6.6	-	140	101.523	2.7	0.343				
							B	90.000	6.2	0.000				
141	140	Node	-	-1.0	9.9	-	HDPE	6	25.5	0.000	0.000	-0.9	0.0	Underground
	141	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	25.5		0.000			
142	141	Node	-	-1.0	9.9	-	HDPE	6	18.8	0.000	0.000	-0.9	0.0	Underground
	142	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	18.8		0.000			
144	143	Node	-	0.5	9.8	-	Sch40	8	21.0	0.000	0.000	-0.9	0.0	Feed Main
	144	Node	-	0.5	9.8	-	120	203.046	7.4	0.000				
							2B	204.848	28.4		0.000			
143	143	Node	-	0.5	9.8	-	HDPE	6	1.5	0.000	0.000	-0.9	0.0	Underground
	142	Node	-	-1.0	9.9	-	140	152.284	0.0	0.147				
							-	131.000	1.5		0.000			
145	144	Node	-	0.5	9.8	-	HDPE	6	1.5	0.000	0.000	-0.9	0.0	Underground
	145	Node	-	-1.0	9.9	-	140	152.284	0.0	0.147				
							-	131.000	1.5		0.000			
163	145	Node	-	-1.0	9.9	-	HDPE	6	2.7	0.000	0.000	-0.4	0.0	Underground
	162	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	2.7		0.000			
146	146	Node	-	-1.0	9.9	-	HDPE	6	9.0	0.000	0.000	0.5	0.0	Underground
	145	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	9.0		0.000			
147	147	Node	-	-1.0	9.9	-	HDPE	6	50.0	0.000	0.000	-0.5	0.0	Underground
	146	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	50.0		0.000			
148	148	Node	-	-1.0	9.9	-	HDPE	6	50.0	0.000	0.000	0.5	0.0	Underground
	147	Node	-	-1.0	9.9	-	140	152.284	0.0	0.000				
							-	131.000	50.0		0.000			
150	149	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	119	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098				
							-	90.000	1.0		0.000			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow	Velocity	Type
	#	Type	Value	Elevation	Res.Pres.	Discharge								
				m	bar	lpm		m	bar/m	bar	lpm	m/s		
151	150	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	-0.1	0.0	Underground
	120	Node	-	-1.0	9.9	-	140	101.523	0.0		0.098			
							-	90.000	1.0		0.000			
152	151	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	121	Node	-	-1.0	9.9	-	140	101.523	0.0		0.098			
							-	90.000	1.0		0.000			
153	152	Node	-	2.0	8.0	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	153	Node	-	-1.5	8.3	-	140	101.523	2.7		0.343			
							B	90.000	6.2		0.000			
154	153	Node	-	-1.5	8.3	-	HDPE	4	7.4	0.000	0.000	-0.1	0.0	Underground
	154	Node	-	-1.5	8.3	-	140	101.523	0.0		0.000			
							-	90.000	7.4		0.000			
155	154	Node	-	-1.5	8.3	-	HDPE	4	50.0	0.000	0.000	-0.1	0.0	Underground
	155	Node	-	-1.5	8.3	-	140	101.523	0.0		0.000			
							-	90.000	50.0		0.000			
156	155	Node	-	-1.5	8.3	-	HDPE	4	49.7	0.000	0.000	0.1	0.0	Underground
	156	Node	-	-1.5	8.3	-	140	101.523	0.0		0.000			
							-	90.000	49.7		0.000			
157	156	Node	-	-1.5	8.3	-	HDPE	4	44.0	0.000	0.000	-0.1	0.0	Underground
	157	Node	-	-1.5	8.3	-	140	101.523	0.0		0.000			
							-	90.000	44.0		0.000			
158	157	Node	-	-1.5	8.3	-	HDPE	4	46.0	0.000	0.000	-0.1	0.0	Underground
	36	Node	-	-1.5	8.3	-	140	101.523	0.0		0.000			
							-	90.000	46.0		0.000			
159	158	Node	-	2.0	7.5	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	112	Node	-	-1.5	7.9	-	140	101.523	2.7		0.343			
							B	90.000	6.2		0.000			
161	160	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	161	Node	-	-1.0	9.9	-	140	101.523	0.0		0.098			
							-	90.000	1.0		0.000			
162	161	Node	-	-1.0	9.9	-	HDPE	4	7.0	0.000	0.000	0.0	0.0	Underground
	91	Node	-	-1.0	9.9	-	140	101.523	0.0		0.000			
							-	90.000	7.0		0.000			
164	162	Node	-	-1.0	9.9	-	HDPE	6	45.4	0.000	0.000	-0.4	0.0	Underground
	90	Node	-	-1.0	9.9	-	140	152.284	0.0		0.000			
							-	131.000	45.4		0.000			
165	163	Node	-	-1.0	9.9	-	HDPE	6	5.6	0.000	0.000	1.6	0.0	Underground
	159	Node	-	-1.0	9.9	-	140	152.284	0.0		0.000			
							-	131.000	5.6		0.000			
166	164	Node	-	0.5	9.8	-	HDPE	6	1.5	0.000	0.000	-1.6	0.0	Underground
	163	Node	-	-1.0	9.9	-	140	152.284	1.8		0.147			
							B	131.000	3.3		0.000			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss bar/m	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow lpm	Velocity m/s	Type
	#	Type	Value	Elevation m	Res.Pres. bar	Discharge lpm								
168	165	Node	-	2.0	8.0	-	HDPE	4	3.5	0.000	0.000	-0.1	0.0	Underground
	166	Node	-	-1.5	8.3	-	140 B	101.523 90.000	2.7 6.2		0.343 0.000			
169	166	Node	-	-1.5	8.3	-	HDPE	4	7.4	0.000	0.000	0.0	0.0	Underground
	155	Node	-	-1.5	8.3	-	140 -	101.523 90.000	0.0 7.4		0.000 0.000			
170	167	Node	-	2.0	7.6	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	113	Node	-	-1.5	8.0	-	140 B	101.523 90.000	2.7 6.2		0.343 0.000			
171	168	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	123	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 1.0		0.098 0.000			
172	169	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	170	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 1.0		0.098 0.000			
173	170	Node	-	-1.0	9.9	-	HDPE	4	7.0	0.000	0.000	0.0	0.0	Underground
	92	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 7.0		0.000 0.000			
174	171	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	146	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 1.0		0.098 0.000			
175	172	Node	-	2.0	8.0	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	173	Node	-	-1.5	8.3	-	140 B	101.523 90.000	2.7 6.2		0.343 0.000			
176	173	Node	-	-1.5	8.3	-	HDPE	4	7.4	0.000	0.000	0.0	0.0	Underground
	156	Node	-	-1.5	8.3	-	140 -	101.523 90.000	0.0 7.4		0.000 0.000			
177	174	Node	-	2.0	8.0	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	175	Node	-	-1.5	8.3	-	140 B	101.523 90.000	2.7 6.2		0.343 0.000			
178	175	Node	-	-1.5	8.3	-	HDPE	4	4.8	0.000	0.000	-0.1	0.0	Underground
	176	Node	-	-1.5	8.3	-	140 -	101.523 90.000	0.0 4.8		0.000 0.000			
179	176	Node	-	-1.5	8.3	-	HDPE	4	6.0	0.000	0.000	0.0	0.0	Underground
	157	Node	-	-1.5	8.3	-	140 -	101.523 90.000	0.0 6.0		0.000 0.000			
180	177	Node	-	2.0	7.8	-	HDPE	4	3.5	0.000	0.000	0.0	0.0	Underground
	114	Node	-	-1.5	8.1	-	140 B	101.523 90.000	2.7 6.2		0.343 0.000			
181	178	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	-0.1	0.0	Underground
	179	Node	-	-1.0	9.9	-	140 -	101.523 90.000	0.0 1.0		0.098 0.000			

PIPES														
#	Start/End Nodes						Material HWC Fittings	Size Nom.Diam. Int.Diam.	Length Eq.Length Total Length	Fr.Loss bar/m	Pres.Fr.Loss Pres.Elev.Loss Pres.Vel.Loss	Flow lpm	Velocity m/s	Type
	#	Type	Value	Elevation m	Res.Pres. bar	Discharge lpm								
182	179	Node	-	-1.0	9.9	-	HDPE	4	7.0	0.000	0.000	-0.1	0.0	Underground
	93	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000	0.000			
							-	90.000	7.0		0.000			
183	180	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	181	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098	0.000			
							-	90.000	1.0		0.000			
184	181	Node	-	-1.0	9.9	-	HDPE	4	21.2	0.000	0.000	0.0	0.0	Underground
	182	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000	0.000			
							-	90.000	21.2		0.000			
185	182	Node	-	-1.0	9.9	-	HDPE	4	6.0	0.000	0.000	0.0	0.0	Underground
	94	Node	-	-1.0	9.9	-	140	101.523	0.0	0.000	0.000			
							-	90.000	6.0		0.000			
186	183	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	147	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098	0.000			
							-	90.000	1.0		0.000			
187	184	Node	-	2.0	7.8	-	HDPE	4	3.5	0.000	0.000	-0.1	0.0	Underground
	115	Node	-	-1.5	8.2	-	140	101.523	2.7	0.343	0.000			
							B	90.000	6.2		0.000			
188	185	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	125	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098	0.000			
							-	90.000	1.0		0.000			
189	186	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	148	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098	0.000			
							-	90.000	1.0		0.000			
190	187	Node	-	0.0	9.8	-	HDPE	4	1.0	0.000	0.000	0.0	0.0	Underground
	126	Node	-	-1.0	9.9	-	140	101.523	0.0	0.098	0.000			
							-	90.000	1.0		0.000			
192	188	Node	-	-1.0	9.9	-	HDPE	4	2.0	0.000	0.000	32.1	0.1	Underground
	189	Node	-	1.0	9.7	-	140	101.523	0.0	0.196	0.000			
							-	90.000	2.0		0.000			
193	189	Node	-	1.0	9.7	-	Sch40	4	1.0	0.000	0.000	32.1	0.1	Feed Main
	190	Node	-	1.0	9.7	-	120	101.523	3.7	0.000	0.000			
							B	102.183	4.7		0.000			
194	190	Node	-	1.0	9.7	-	Sch40	12	0.5	0.000	0.000	32.1	0.0	Feed Main
	40	Node	-	1.0	9.7	-	120	304.569	0.0	0.000	0.000			
							-	309.645	0.5		0.000			

FLOW DIAGRAM

