The OPTMODEL Procedure

Problem Summary	
Objective Sense	Minimization
Objective Function	NetCost
Objective Type	Linear
Number of Variables	316
Bounded Above	0
Bounded Below	48
Bounded Below and Above	268
Free	0
Fixed	0
Binary	244
Integer	72
Number of Constraints	969
Linear LE (<=)	532
Linear EQ (=)	1
Linear GE (>=)	436
Linear Range	0
Constraint Coefficients	12988

The OPTMODEL Procedure

Solution Summary	
Solver	MILP
Algorithm	Branch and Cut
Objective Function	NetCost
Solution Status	Optimal within Relative Gap
Objective Value	1910.2461287
Relative Gap	0.0000131415
Absolute Gap	0.0251030768
Primal Infeasibility	6.2499878E-7
Bound Infeasibility	6.2499878E-7
Integer Infeasibility	2.500001E-6
Best Bound	1910.2210256
Nodes	68873
Solutions Found	12
Iterations	659162
Presolve Time	0.08
Solution Time	36.59

Costs, $:	$1910.25

pumps_flow_schedule:

pumps_flow_schedule						
	Cornwall_P1	Cornwall_P2	Cornwall_P3	Kingsland_P1	Kingsland_P2	Kingsland_P3
1	600.0000	600.0000	800.0000	800.0000	800.0000	0.0000
2	0.0000	0.0000	800.0000	800.0000	800.0000	400.0000
3	600.0000	600.0000	800.0000	800.0000	800.0000	400.0000
4	600.0000	600.0000	800.0000	800.0000	800.0000	400.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	400.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	400.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	0.0000	0.0000	0.0000	-0.0005	800.0000	0.0000
10	0.0000	0.0000	0.0000	-0.0005	800.0000	400.0000
11	0.0000	600.0000	0.0000	0.0000	800.0000	400.0000

The OPTMODEL Procedure

	Cornwall_P1	Cornwall_P2	Cornwall_P3	Kingsland_P1	Kingsland_P2	Kingsland_P3
12	0.0000	600.0000	0.0000	0.0000	0.0000	0.0000
13	0.0000	600.0000	0.0000	0.0000	0.0000	0.0000
14	600.0000	0.0000	0.0000	800.0000	0.0000	400.0000
15	600.0000	0.0000	0.0000	800.0000	0.0000	400.0000
16	600.0000	0.0000	0.0000	800.0000	0.0000	0.0000
17	600.0000	600.0000	800.0000	800.0000	0.0000	0.0000
18	600.0000	600.0000	800.0000	800.0000	0.0000	0.0000
19	600.0000	600.0000	800.0000	800.0000	0.0000	0.0000
20	600.0000	600.0000	800.0000	800.0000	0.0000	0.0010
21	0.0000	600.0000	800.0000	800.0000	0.0000	400.0000
22	0.0000	600.0000	800.0000	800.0000	800.0000	400.0000
23	0.0000	-0.0000	0.0000	800.0000	800.0000	400.0000
24	600.0000	600.0000	0.0000	800.0000	800.0000	0.0000

pumps_flow_schedule

sources_schedule:

[1]	sources_schedule
1	800
2	800
3	800
4	3500
5	3500
6	3500
7	3500
8	1165
9	1165
10	1165
11	1165
12	3500
13	3500
14	3500
15	3500
16	2039
17	2039
18	2039

The OPTMODEL Procedure

[1]	sources_schedule
19	2039
20	3500
21	3500
22	3500
23	3500
24	800

valves_schedule:

valves_schedule		
	EricssonValve	**GreenwoodValve**
1	0	1484
2	0	1484
3	836	1484
4	836	1484
5	836	1484
6	836	1484
7	836	1484
8	836	1484
9	0	1484
10	0	1484
11	0	1484
12	0	1484
13	0	1484
14	0	1484
15	0	1484
16	0	1484
17	302	1484
18	302	1484
19	302	1484
20	302	1484
21	0	1484
22	0	1484
23	0	1484
24	0	1484

The OPTMODEL Procedure

tanks_level				
	ClearWells	**Ellerslie**	**Newmarket**	**Penrose**
0	29000	11000	17000	11000
1	26316	12612	17435	10505
2	24832	12954	17739	9551
3	22148	13493	17912	8552
4	22164	13865	17748	7515
5	24180	12071	15794	7934
6	26196	10177	14221	7988
7	28212	8216	12378	8308
8	27893	6422	12005	8671
9	27574	5630	12022	8686
10	27255	5192	12547	8595
11	26336	5323	13153	8651
12	27752	5369	12620	9872
13	29168	5327	12074	11036
14	30584	5250	12705	10912
15	32000	5150	13228	10748
16	31955	5085	13005	10926
17	30510	6277	13183	11171
18	29065	7469	13222	11585
19	27620	8638	13311	12017
20	27636	9777	13550	12512
21	28252	10571	13949	12616
22	28868	11348	15190	11948
23	30884	10567	16346	11274
24	29000	10988	16988	10995

Tanks volume change

PS Flow

Valve flow