Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type
10.000	44.200	0.184	240.2	0.081	4.00	0.0	0.600	o	300	Pipe/Conduit
11.000	36.100	0.150	240.7	0.066	4.00	0.0	0.600	o	300	Pipe/Conduit
10.001	13.800	0.028	492.9	0.026	0.00	0.0	0.600	o	525	Pipe/Conduit
10.002	20.200	0.040	505.0	0.038	0.00	0.0	0.600	o	525	Pipe/Conduit
12.000	18.500	0.077	240.3	0.035	5.00	0.0	0.600	o	300	Pipe/Conduit
12.001	28.200	0.118	239.0	0.052	0.00	0.0	0.600	o	300	Pipe/Conduit
10.003	34.900	0.070	498.6	0.064	0.00	0.0	0.600	o	525	Pipe/Conduit
13.000	18.200	0.075	242.7	0.033	5.00	0.0	0.600	o	300	Pipe/Conduit
13.001	43.800	0.183	239.3	0.080	0.00	0.0	0.600	o	300	Pipe/Conduit
13.002	18.000	0.075	240.0	0.033	0.00	0.0	0.600	o	300	Pipe/Conduit
10.004	28.400	0.057	498.2	0.052	0.00	0.0	0.600	o	600	Pipe/Conduit
10.005	22.700	0.045	504.4	0.042	0.00	0.0	0.600	o	600	Pipe/Conduit
10.006	24.200	0.048	504.2	0.044	0.00	0.0	0.600	o	600	Pipe/Conduit
14.000	30.500	0.127	240.2	0.056	5.00	0.0	0.600	o	300	Pipe/Conduit
10.007	30.200	0.060	503.3	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit
15.000	32.800	0.137	239.4	0.060	5.00	0.0	0.600	o	300	Pipe/Conduit
15.001	22.800	0.095	240.0	0.042	0.00	0.0	0.600	o	300	Pipe/Conduit
10.008	23.100	0.046	502.2	0.042	0.00	0.0	0.600	o	600	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
10.000	6.605	0.081	0.0	1.01	71.4
11.000	6.571	0.066	0.0	1.01	71.3
10.001	6.196	0.173	0.0	1.00	216.9
10.002	6.168	0.211	0.0	0.99	214.3
12.000	6.655	0.035	0.0	1.01	71.4
12.001	6.578	0.087	0.0	1.01	71.6
10.003	6.128	0.362	0.0	1.00	215.7
13.000	6.706	0.033	0.0	1.00	71.0
13.001	6.631	0.113	0.0	1.01	71.5
13.002	6.448	0.146	0.0	1.01	71.4
10.004	6.058	0.560	0.0	1.08	306.5
10.005	6.001	0.602	0.0	1.08	304.6
10.006	5.956	0.646	0.0	1.08	304.7
14.000	6.312	0.056	0.0	1.01	71.4
10.007	5.908	0.702	0.0	1.08	305.0
15.000	6.305	0.060	0.0	1.01	71.5
15.001	6.168	0.102	0.0	1.01	71.4
10.008	5.848	0.846	0.0	1.08	305.3

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type
10.009	21.800	0.044	495.5	0.041	0.00	0.0	0.600	o	600	Pipe/Conduit
10.010	29.100	0.058	501.7	0.053	0.00	0.0	0.600	o	600	Pipe/Conduit
16.000	36.500	0.152	240.1	0.067	5.00	0.0	0.600	o	300	Pipe/Conduit
16.001	29.300	0.122	240.2	0.054	0.00	0.0	0.600	o	300	Pipe/Conduit
16.002	21.300	0.089	239.3	0.039	0.00	0.0	0.600	o	300	Pipe/Conduit
16.003	12.800	0.053	241.5	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit
10.011	23.400	0.047	497.9	0.043	0.00	0.0	0.600	o	600	Pipe/Conduit
10.012	55.200	0.110	501.8	0.101	0.00	0.0	0.600	o	600	Pipe/Conduit
10.013	10.800	0.100	108.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit
10.014	22.600	0.800	28.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
10.009	5.802	0.887	0.0	1.09	307.4
10.010	5.758	0.940	0.0	1.08	305.5
16.000	6.341	0.067	0.0	1.01	71.4
16.001	6.189	0.121	0.0	1.01	71.4
16.002	6.067	0.160	0.0	1.01	71.5
16.003	5.978	0.160	0.0	1.01	71.2
10.011	5.700	1.143	0.0	1.08	306.6
10.012	5.653	1.244	0.0	1.08	305.4
10.013	5.500	1.244	0.0	2.34	662.5
10.014	5.400	1.244	0.0	2.47	98.3

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
10.000	o	300	S20	8.300	6.605	1.395	Open Manhole	1200
11.000	o	300	S21/1	8.300	6.571	1.429	Open Manhole	1200
10.001	o	525	S21	8.200	6.196	1.479	Open Manhole	1800
10.002	o	525	S22	8.300	6.168	1.607	Open Manhole	1800
12.000	o	300	S23/2	8.620	6.655	1.665	Open Manhole	1200
12.001	o	300	S23/1	8.500	6.578	1.622	Open Manhole	1200
10.003	o	525	S23	8.350	6.128	1.697	Open Manhole	1800
13.000	o	300	S24/3	8.400	6.706	1.394	Open Manhole	1200
13.001	o	300	S24/2	8.300	6.631	1.369	Open Manhole	1500
13.002	o	300	S24/1	8.250	6.448	1.502	Open Manhole	1200
10.004	o	600	S24	8.100	6.058	1.442	Open Manhole	1800
10.005	o	600	S25	8.100	6.001	1.499	Open Manhole	1800
10.006	o	600	S26	8.200	5.956	1.644	Open Manhole	1800
14.000	o	300	S27/1	8.100	6.312	1.488	Open Manhole	1200
10.007	o	600	S27	8.000	5.908	1.492	Open Manhole	1800
15.000	o	300	S28/2	7.900	6.305	1.295	Open Manhole	1500
15.001	o	300	S28/1	8.200	6.168	1.732	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
10.000	44.200	240.2	S21	8.200	6.421	1.479	Open Manhole	1800
11.000	36.100	240.7	S21	8.200	6.421	1.479	Open Manhole	1800
10.001	13.800	492.9	S22	8.300	6.168	1.607	Open Manhole	1800
10.002	20.200	505.0	S23	8.350	6.128	1.697	Open Manhole	1800
12.000	18.500	240.3	S23/1	8.500	6.578	1.622	Open Manhole	1200
12.001	28.200	239.0	S23	8.350	6.460	1.590	Open Manhole	1800
10.003	34.900	498.6	S24	8.100	6.058	1.517	Open Manhole	1800
13.000	18.200	242.7	S24/2	8.300	6.631	1.369	Open Manhole	1500
13.001	43.800	239.3	S24/1	8.250	6.448	1.502	Open Manhole	1200
13.002	18.000	240.0	S24	8.100	6.373	1.427	Open Manhole	1800
10.004	28.400	498.2	S25	8.100	6.001	1.499	Open Manhole	1800
10.005	22.700	504.4	S26	8.200	5.956	1.644	Open Manhole	1800
10.006	24.200	504.2	S27	8.000	5.908	1.492	Open Manhole	1800
14.000	30.500	240.2	S27	8.000	6.185	1.515	Open Manhole	1800
10.007	30.200	503.3	S28	8.000	5.848	1.552	Open Manhole	1800
15.000	32.800	239.4	S28/1	8.200	6.168	1.732	Open Manhole	1200
15.001	22.800	240.0	S28	8.000	6.073	1.627	Open Manhole	1800

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
10.008	o	600	S28	8.000	5.848	1.552	Open Manhole	1800
10.009	o	600	S29	8.000	5.802	1.598	Open Manhole	1800
10.010	o	600	S30	8.000	5.758	1.642	Open Manhole	1800
16.000	o	300	S31/1	8.150	6.341	1.509	Open Manhole	1200
16.001	o	300	S31/2	8.000	6.189	1.511	Open Manhole	1200
16.002	o	300	S31/3	8.300	6.067	1.933	Open Manhole	1200
16.003	o	300	S31/4	8.350	5.978	2.072	Open Manhole	1200
10.011	o	600	S31	8.200	5.700	1.900	Open Manhole	1800
10.012	o	600	S32	8.000	5.653	1.747	Open Manhole	1800
10.013	o	600	S33	8.000	5.500	1.900	Open Manhole	1800
10.014	o	225	S34	8.000	5.400	2.375	Open Manhole	2100

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
10.008	23.100	502.2	S29	8.000	5.802	1.598	Open Manhole	1800
10.009	21.800	495.5	S30	8.000	5.758	1.642	Open Manhole	1800
10.010	29.100	501.7	S31	8.200	5.700	1.900	Open Manhole	1800
16.000	36.500	240.1	S31/2	8.000	6.189	1.511	Open Manhole	1200
16.001	29.300	240.2	S31/3	8.300	6.067	1.933	Open Manhole	1200
16.002	21.300	239.3	S31/4	8.350	5.978	2.072	Open Manhole	1200
16.003	12.800	241.5	S31	8.200	5.925	1.975	Open Manhole	1800
10.011	23.400	497.9	S32	8.000	5.653	1.747	Open Manhole	1800
10.012	55.200	501.8	S33	8.000	5.543	1.857	Open Manhole	1800
10.013	10.800	108.0	S34	8.000	5.400	2.000	Open Manhole	2100
10.014	22.600	28.3		5.250	4.600	0.425	Open Manhole	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0	Number of Offline Controls 0	Number of Time/Area Diagrams 0
Number of Online Controls 1	Number of Storage Structures 1	Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D1 (1km)	0.362	Summer Storms	Yes
Return Period (years)	100	D2 (1km)	0.381	Winter Storms	No
FEH Rainfall Version	1999	D3 (1km)	0.330	Cv (Summer)	0.750
Site Location		E (1km)	0.295	Cv (Winter)	0.840
C (1km)	-0.028	F (1km)	2.426	Storm Duration (mins)	30

Online Controls for Storm

Hydro-Brake® Optimum Manhole: S34, DS/PN: 10.014, Volume (m³): 11.5

Unit Reference	MD-SHE-0060-2400-2300-2400
Design Head (m)	2.300
Design Flow (l/s)	2.4
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	60
Invert Level (m)	5.400
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.300	2.4	Kick-Flo®	0.540	1.2
Flush-Flo™	0.263	1.5	Mean Flow over Head Range	-	1.8

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.3	0.800	1.5	2.000	2.2	4.000	3.1	7.000	4.0
0.200	1.5	1.000	1.6	2.200	2.3	4.500	3.3	7.500	4.1
0.300	1.5	1.200	1.8	2.400	2.4	5.000	3.4	8.000	4.3
0.400	1.5	1.400	1.9	2.600	2.5	5.500	3.6	8.500	4.4
0.500	1.4	1.600	2.0	3.000	2.7	6.000	3.7	9.000	4.5
0.600	1.3	1.800	2.1	3.500	2.9	6.500	3.9	9.500	4.6

Storage Structures for Storm

Tank or Pond Manhole: S33, DS/PN: 10.013

Invert Level (m) 5.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	501.0	1.200	1086.0	2.400	1762.0	3.600	1762.0	4.800	1762.0
0.200	583.0	1.400	1207.0	2.600	1762.0	3.800	1762.0	5.000	1762.0
0.400	671.0	1.600	1336.0	2.800	1762.0	4.000	1762.0		
0.600	765.0	1.800	1472.0	3.000	1762.0	4.200	1762.0		
0.800	865.0	2.000	1615.0	3.200	1762.0	4.400	1762.0		
1.000	972.0	2.200	1762.0	3.400	1762.0	4.600	1762.0		

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D1 (1km) 0.362	F (1km) 2.426
FEH Rainfall Version	1999	D2 (1km) 0.381	Cv (Summer) 0.750
Site Location		D3 (1km) 0.330	Cv (Winter) 0.840
C (1km) -0.028		E (1km) 0.295	

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
10.000	S20	15 Winter	1	+0%	100/15 Summer				6.685	-0.220
11.000	S21/1	15 Winter	1	+0%	100/15 Summer				6.643	-0.228
10.001	S21	15 Winter	1	+0%	100/15 Summer				6.370	-0.351
10.002	S22	15 Winter	1	+0%	100/15 Summer				6.350	-0.343
12.000	S23/2	15 Winter	1	+0%	100/15 Summer				6.709	-0.246
12.001	S23/1	15 Winter	1	+0%	100/15 Summer				6.655	-0.223
10.003	S23	15 Winter	1	+0%	100/15 Summer				6.327	-0.326
13.000	S24/3	15 Winter	1	+0%	100/15 Summer				6.762	-0.244
13.001	S24/2	15 Winter	1	+0%	100/15 Summer				6.718	-0.213
13.002	S24/1	15 Winter	1	+0%	100/15 Summer				6.550	-0.198
10.004	S24	15 Winter	1	+0%	100/15 Summer				6.281	-0.377
10.005	S25	15 Winter	1	+0%	100/15 Summer				6.233	-0.368
10.006	S26	15 Winter	1	+0%	100/15 Summer				6.190	-0.366
14.000	S27/1	15 Winter	1	+0%	100/15 Summer				6.377	-0.235
10.007	S27	15 Winter	1	+0%	100/15 Summer				6.146	-0.362
15.000	S28/2	15 Winter	1	+0%	100/15 Summer				6.372	-0.233
15.001	S28/1	15 Winter	1	+0%	100/15 Summer				6.255	-0.213
10.008	S28	15 Winter	1	+0%	100/15 Summer				6.097	-0.351
10.009	S29	15 Winter	1	+0%	100/15 Summer				6.051	-0.351
10.010	S30	15 Winter	1	+0%	30/2880 Winter				6.003	-0.355
16.000	S31/1	15 Winter	1	+0%	100/15 Summer				6.412	-0.229
16.001	S31/2	15 Winter	1	+0%	100/15 Summer				6.282	-0.207
16.002	S31/3	15 Winter	1	+0%	100/15 Summer				6.175	-0.192
16.003	S31/4	15 Winter	1	+0%	30/960 Winter				6.089	-0.189
10.011	S31	15 Winter	1	+0%	30/1440 Winter				5.944	-0.356
10.012	S32	2880 Winter	1	+0%	30/960 Winter				5.938	-0.315
10.013	S33	2880 Winter	1	+0%	30/240 Winter				5.938	-0.162
10.014	S34	2880 Winter	1	+0%	1/15 Winter				5.938	0.313

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.000	S20	0.000	0.16		10.7	OK	
11.000	S21/1	0.000	0.13		8.7	OK	
10.001	S21	0.000	0.18		21.7	OK	
10.002	S22	0.000	0.16		23.9	OK	
12.000	S23/2	0.000	0.07		4.2	OK	
12.001	S23/1	0.000	0.15		9.7	OK	
10.003	S23	0.000	0.21		38.0	OK	
13.000	S24/3	0.000	0.06		4.0	OK	
13.001	S24/2	0.000	0.18		12.0	OK	
13.002	S24/1	0.000	0.25		15.3	OK	
10.004	S24	0.000	0.22		54.8	OK	
10.005	S25	0.000	0.25		55.6	OK	
10.006	S26	0.000	0.24		56.8	OK	
14.000	S27/1	0.000	0.11		6.8	OK	
10.007	S27	0.000	0.23		57.9	OK	
15.000	S28/2	0.000	0.11		7.2	OK	
15.001	S28/1	0.000	0.18		11.6	OK	
10.008	S28	0.000	0.28		64.8	OK	
10.009	S29	0.000	0.30		65.4	OK	
10.010	S30	0.000	0.27		67.0	OK	
16.000	S31/1	0.000	0.12		8.1	OK	
16.001	S31/2	0.000	0.21		13.5	OK	
16.002	S31/3	0.000	0.27		17.3	OK	
16.003	S31/4	0.000	0.30		17.3	OK	
10.011	S31	0.000	0.33		76.1	OK	
10.012	S32	0.000	0.03		7.2	OK	
10.013	S33	0.000	0.01		1.8	OK	
10.014	S34	0.000	0.02		1.5	SURCHARGED	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D1 (1km) 0.362	F (1km) 2.426
FEH Rainfall Version	1999	D2 (1km) 0.381	Cv (Summer) 0.750
Site Location		D3 (1km) 0.330	Cv (Winter) 0.840
C (1km)	-0.028	E (1km) 0.295	

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
10.000	S20	15 Winter	30	+0%	100/15 Summer				6.754	-0.151
11.000	S21/1	15 Winter	30	+0%	100/15 Summer				6.704	-0.167
10.001	S21	15 Winter	30	+0%	100/15 Summer				6.652	-0.069
10.002	S22	15 Winter	30	+0%	100/15 Summer				6.638	-0.055
12.000	S23/2	15 Winter	30	+0%	100/15 Summer				6.767	-0.188
12.001	S23/1	15 Winter	30	+0%	100/15 Summer				6.734	-0.144
10.003	S23	15 Winter	30	+0%	100/15 Summer				6.606	-0.047
13.000	S24/3	15 Winter	30	+0%	100/15 Summer				6.831	-0.175
13.001	S24/2	15 Winter	30	+0%	100/15 Summer				6.812	-0.119
13.002	S24/1	15 Winter	30	+0%	100/15 Summer				6.667	-0.081
10.004	S24	15 Winter	30	+0%	100/15 Summer				6.533	-0.125
10.005	S25	15 Winter	30	+0%	100/15 Summer				6.490	-0.111
10.006	S26	15 Winter	30	+0%	100/15 Summer				6.454	-0.102
14.000	S27/1	15 Winter	30	+0%	100/15 Summer				6.431	-0.181
10.007	S27	15 Winter	30	+0%	100/15 Summer				6.411	-0.097
15.000	S28/2	15 Winter	30	+0%	100/15 Summer				6.428	-0.177
15.001	S28/1	15 Winter	30	+0%	100/15 Summer				6.377	-0.091
10.008	S28	2880 Winter	30	+0%	100/15 Summer				6.359	-0.089
10.009	S29	2880 Winter	30	+0%	100/15 Summer				6.359	-0.043
10.010	S30	2880 Winter	30	+0%	30/2880 Winter				6.359	0.001
16.000	S31/1	15 Winter	30	+0%	100/15 Summer				6.471	-0.170
16.001	S31/2	15 Winter	30	+0%	100/15 Summer				6.378	-0.111
16.002	S31/3	2880 Winter	30	+0%	100/15 Summer				6.359	-0.008
16.003	S31/4	2880 Winter	30	+0%	30/960 Winter				6.358	0.080
10.011	S31	2880 Winter	30	+0%	30/1440 Winter				6.359	0.059
10.012	S32	2880 Winter	30	+0%	30/960 Winter				6.359	0.106
10.013	S33	2880 Winter	30	+0%	30/240 Winter				6.359	0.259
10.014	S34	2880 Winter	30	+0%	1/15 Winter				6.367	0.742

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.000	S20	0.000	0.48		32.1	OK	
11.000	S21/1	0.000	0.40		26.4	OK	
10.001	S21	0.000	0.48		58.5	OK	
10.002	S22	0.000	0.45		67.4	OK	
12.000	S23/2	0.000	0.21		13.1	OK	
12.001	S23/1	0.000	0.51		33.3	OK	
10.003	S23	0.000	0.62		114.3	OK	
13.000	S24/3	0.000	0.20		12.4	OK	
13.001	S24/2	0.000	0.64		43.0	OK	
13.002	S24/1	0.000	0.88		54.1	OK	
10.004	S24	0.000	0.69		170.6	OK	
10.005	S25	0.000	0.76		170.3	OK	
10.006	S26	0.000	0.74		173.7	OK	
14.000	S27/1	0.000	0.32		20.9	OK	
10.007	S27	0.000	0.70		174.1	OK	
15.000	S28/2	0.000	0.34		22.4	OK	
15.001	S28/1	0.000	0.60		38.2	OK	
10.008	S28	0.000	0.04		8.8	OK	
10.009	S29	0.000	0.04		9.1	OK	
10.010	S30	0.000	0.04		9.4	SURCHARGED	
16.000	S31/1	0.000	0.38		24.9	OK	
16.001	S31/2	0.000	0.70		45.1	OK	
16.002	S31/3	0.000	0.03		1.7	OK	
16.003	S31/4	0.000	0.03		1.7	SURCHARGED	
10.011	S31	0.000	0.05		11.3	SURCHARGED	
10.012	S32	0.000	0.04		12.2	SURCHARGED	
10.013	S33	0.000	0.01		2.0	SURCHARGED	
10.014	S34	0.000	0.02		1.6	SURCHARGED	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D1 (1km) 0.362	F (1km) 2.426
FEH Rainfall Version	1999	D2 (1km) 0.381	Cv (Summer) 0.750
Site Location		D3 (1km) 0.330	Cv (Winter) 0.840
C (1km) -0.028		E (1km) 0.295	

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	ON
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
10.000	S20	15 Winter	100	+40%	100/15 Summer				7.819	0.914
11.000	S21/1	15 Winter	100	+40%	100/15 Summer				7.810	0.939
10.001	S21	15 Winter	100	+40%	100/15 Summer				7.732	1.011
10.002	S22	15 Winter	100	+40%	100/15 Summer				7.710	1.017
12.000	S23/2	15 Winter	100	+40%	100/15 Summer				7.796	0.841
12.001	S23/1	15 Winter	100	+40%	100/15 Summer				7.777	0.899
10.003	S23	15 Winter	100	+40%	100/15 Summer				7.682	1.029
13.000	S24/3	15 Winter	100	+40%	100/15 Summer				7.870	0.864
13.001	S24/2	15 Winter	100	+40%	100/15 Summer				7.853	0.922
13.002	S24/1	15 Winter	100	+40%	100/15 Summer				7.735	0.987
10.004	S24	15 Winter	100	+40%	100/15 Summer				7.634	0.976
10.005	S25	15 Winter	100	+40%	100/15 Summer				7.578	0.977
10.006	S26	15 Winter	100	+40%	100/15 Summer				7.516	0.960
14.000	S27/1	15 Winter	100	+40%	100/15 Summer				7.520	0.908
10.007	S27	15 Winter	100	+40%	100/15 Summer				7.439	0.931
15.000	S28/2	15 Winter	100	+40%	100/15 Summer				7.492	0.887
15.001	S28/1	15 Winter	100	+40%	100/15 Summer				7.412	0.944
10.008	S28	15 Winter	100	+40%	100/15 Summer				7.329	0.881
10.009	S29	15 Winter	100	+40%	100/15 Summer				7.169	0.767
10.010	S30	15 Winter	100	+40%	30/2880 Winter				6.996	0.638
16.000	S31/1	15 Winter	100	+40%	100/15 Summer				7.343	0.702
16.001	S31/2	15 Winter	100	+40%	100/15 Summer				7.266	0.777
16.002	S31/3	15 Winter	100	+40%	100/15 Summer				7.091	0.724
16.003	S31/4	2880 Winter	100	+40%	30/960 Winter				6.925	0.647
10.011	S31	2880 Winter	100	+40%	30/1440 Winter				6.925	0.625
10.012	S32	4320 Winter	100	+40%	30/960 Winter				6.925	0.672
10.013	S33	4320 Winter	100	+40%	30/240 Winter				6.925	0.825
10.014	S34	4320 Winter	100	+40%	1/15 Winter				6.933	1.308

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.000	S20	0.000	0.95		63.1	SURCHARGED	
11.000	S21/1	0.000	0.78		51.1	SURCHARGED	
10.001	S21	0.000	0.89		107.9	SURCHARGED	
10.002	S22	0.000	0.82		122.3	SURCHARGED	
12.000	S23/2	0.000	0.39		24.1	SURCHARGED	
12.001	S23/1	0.000	0.93		60.1	SURCHARGED	
10.003	S23	0.000	1.10		203.6	SURCHARGED	
13.000	S24/3	0.000	0.36		22.1	SURCHARGED	
13.001	S24/2	0.000	1.19		79.4	SURCHARGED	
13.002	S24/1	0.000	1.55		95.0	SURCHARGED	
10.004	S24	0.000	1.26		311.2	SURCHARGED	
10.005	S25	0.000	1.44		321.4	SURCHARGED	
10.006	S26	0.000	1.41		329.3	SURCHARGED	
14.000	S27/1	0.000	0.62		40.5	SURCHARGED	
10.007	S27	0.000	1.41		350.3	SURCHARGED	
15.000	S28/2	0.000	0.63		41.1	SURCHARGED	
15.001	S28/1	0.000	1.02		64.2	SURCHARGED	
10.008	S28	0.000	1.77		402.5	SURCHARGED	
10.009	S29	0.000	1.86		413.0	SURCHARGED	
10.010	S30	0.000	1.71		423.0	SURCHARGED	
16.000	S31/1	0.000	0.72		47.5	SURCHARGED	
16.001	S31/2	0.000	1.30		84.4	SURCHARGED	
16.002	S31/3	0.000	1.74		109.5	SURCHARGED	
16.003	S31/4	0.000	0.05		3.0	SURCHARGED	
10.011	S31	0.000	0.09		20.8	SURCHARGED	
10.012	S32	0.000	0.06		16.2	SURCHARGED	
10.013	S33	0.000	0.01		2.4	SURCHARGED	
10.014	S34	0.000	0.02		2.0	SURCHARGED	