Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.624	4-8	0.626	8-12	0.017

Total Area Contributing (ha) = 1.267

Total Pipe Volume (m^3) = 127.352

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
1.000	14.127	0.060	235.4	0.101	5.00	0.0	0.600	o	300	Pipe/Conduit
1.001	17.150	0.075	228.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit
1.002	27.947	0.120	232.9	0.034	0.00	0.0	0.600	o	300	Pipe/Conduit
2.000	12.351	0.225	54.9	0.078	5.00	0.0	0.600	o	225	Pipe/Conduit
2.001	13.575	0.490	27.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit
2.002	14.525	1.450	10.0	0.033	0.00	0.0	0.600	o	225	Pipe/Conduit
1.003	11.526	0.040	288.2	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit
1.004	21.979	0.075	293.1	0.026	0.00	0.0	0.600	o	375	Pipe/Conduit
1.005	15.947	0.065	245.3	0.058	0.00	0.0	0.600	o	375	Pipe/Conduit
3.000	15.325	0.650	23.6	0.062	5.00	0.0	0.600	o	225	Pipe/Conduit
1.006	36.949	0.075	492.7	0.017	0.00	0.0	0.600	o	450	Pipe/Conduit
1.007	30.683	0.800	38.4	0.084	0.00	0.0	0.600	o	450	Pipe/Conduit
1.008	53.836	5.420	9.9	0.163	0.00	0.0	0.600	o	525	Pipe/Conduit
4.000	30.350	2.055	14.8	0.087	5.00	0.0	0.600	o	225	Pipe/Conduit
4.001	64.576	6.330	10.2	0.127	0.00	0.0	0.600	o	300	Pipe/Conduit
1.009	19.702	0.895	22.0	0.120	0.00	0.0	0.600	o	525	Pipe/Conduit
5.000	45.998	2.555	18.0	0.067	5.00	0.0	0.600	o	225	Pipe/Conduit
5.001	30.106	1.410	21.4	0.073	0.00	0.0	0.600	o	300	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	197.230	0.101	0.0	1.02	72.1
1.001	197.170	0.101	0.0	1.04	73.2
1.002	197.095	0.135	0.0	1.03	72.5
2.000	199.215	0.078	0.0	1.77	70.3
2.001	198.990	0.078	0.0	2.50	99.2
2.002	198.500	0.111	0.0	4.16	165.3
1.003	196.900	0.246	0.0	1.06	117.3
1.004	196.860	0.272	0.0	1.05	116.3
1.005	196.785	0.330	0.0	1.15	127.3
3.000	197.520	0.062	0.0	2.71	107.6
1.006	196.610	0.409	0.0	0.91	144.6
1.007	196.535	0.493	0.0	3.29	523.4
1.008	195.660	0.656	0.0	7.14	1544.7
4.000	198.925	0.087	0.0	3.42	136.1
4.001	196.795	0.214	0.0	4.95	349.9
1.009	190.240	0.990	0.0	4.79	1036.7
5.000	193.735	0.067	0.0	3.10	123.2
5.001	191.105	0.140	0.0	3.42	241.6

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
6.000	51.000	0.105	485.7	0.000	5.00	0.0	0.600	o	825	Pipe/Conduit
6.001	12.851	0.030	428.4	0.000	0.00	0.0	0.600	o	825	Pipe/Conduit
5.002	62.344	0.125	498.8	0.107	0.00	0.0	0.600	o	825	Pipe/Conduit
1.010	17.589	0.040	439.7	0.030	0.00	0.0	0.600	o	825	Pipe/Conduit
1.011	2.279	0.020	114.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit
1.012	50.744	0.380	133.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit
1.013	2.828	0.000	0.0	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)
6.000	189.305	0.000	0.0	1.34	716.5
6.001	189.200	0.000	0.0	1.43	763.4
5.002	189.170	0.247	0.0	1.32	707.0
1.010	189.045	1.267	0.0	1.41	753.4
1.011	189.005	1.267	0.0	1.22	48.7
1.012	188.985	1.267	0.0	1.13	44.9
1.013	0.000	1.267	0.0	0.00	0.0

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	198.934	1.704	Open Manhole	1200	1.000	197.230	300				
S2	199.217	2.047	Open Manhole	1200	1.001	197.170	300	1.000	197.170	300	
S3	199.559	2.464	Open Manhole	1200	1.002	197.095	300	1.001	197.095	300	
S4	200.803	1.588	Open Manhole	1200	2.000	199.215	225				
S5	200.527	1.537	Open Manhole	1200	2.001	198.990	225	2.000	198.990	225	
S6	200.248	1.748	Open Manhole	1200	2.002	198.500	225	2.001	198.500	225	
S7	199.945	3.045	Open Manhole	1500	1.003	196.900	375	1.002	196.975	300	
								2.002	197.050	225	
S8	199.740	2.880	Open Manhole	1500	1.004	196.860	375	1.003	196.860	375	
S9	199.474	2.689	Open Manhole	1500	1.005	196.785	375	1.004	196.785	375	
S10	199.081	1.561	Open Manhole	1200	3.000	197.520	225				
S11	199.269	2.659	Open Manhole	1500	1.006	196.610	450	1.005	196.720	375	35
								3.000	196.870	225	35
S12	198.439	1.904	Open Manhole	1500	1.007	196.535	450	1.006	196.535	450	
S13	197.377	1.717	Open Manhole	1500	1.008	195.660	525	1.007	195.735	450	
S14	200.299	1.374	Open Manhole	1500	4.000	198.925	225				
S15	199.362	2.567	Open Manhole	1200	4.001	196.795	300	4.000	196.870	225	
S16	195.563	5.323	Open Manhole	1800	1.009	190.240	525	1.008	190.240	525	
								4.001	190.465	300	
S17	195.388	1.653	Open Manhole	1200	5.000	193.735	225				
S18	192.682	1.577	Open Manhole	1200	5.001	191.105	300	5.000	191.180	225	
S19	193.194	3.889	Open Manhole	1200	6.000	189.305	825				
S20	191.579	2.379	Open Manhole	1800	6.001	189.200	825	6.000	189.200	825	
S21	190.854	1.684	Open Manhole	1800	5.002	189.170	825	5.001	189.695	300	
								6.001	189.170	825	
S22	194.393	5.348	Open Manhole	1800	1.010	189.045	825	1.009	189.345	525	
								5.002	189.045	825	
S23	193.529	4.524	Open Manhole	1800	1.011	189.005	225	1.010	189.005	825	
C1	193.425	4.440	Open Manhole	1200	1.012	188.985	225	1.011	188.985	225	
C2	189.679	189.679	Open Manhole	1200	1.013	0.000	225	1.012	188.605	225	188605
Ex. CW	190.380	190.380	Open Manhole	1200		OUTFALL		1.013	0.000	225	

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)
1.000	o	300	S1	198.934	197.230	1.404	Open Manhole	1200
1.001	o	300	S2	199.217	197.170	1.747	Open Manhole	1200
1.002	o	300	S3	199.559	197.095	2.164	Open Manhole	1200
2.000	o	225	S4	200.803	199.215	1.363	Open Manhole	1200
2.001	o	225	S5	200.527	198.990	1.312	Open Manhole	1200
2.002	o	225	S6	200.248	198.500	1.523	Open Manhole	1200
1.003	o	375	S7	199.945	196.900	2.670	Open Manhole	1500
1.004	o	375	S8	199.740	196.860	2.505	Open Manhole	1500
1.005	o	375	S9	199.474	196.785	2.314	Open Manhole	1500
3.000	o	225	S10	199.081	197.520	1.336	Open Manhole	1200
1.006	o	450	S11	199.269	196.610	2.209	Open Manhole	1500
1.007	o	450	S12	198.439	196.535	1.454	Open Manhole	1500
1.008	o	525	S13	197.377	195.660	1.192	Open Manhole	1500
4.000	o	225	S14	200.299	198.925	1.149	Open Manhole	1500
4.001	o	300	S15	199.362	196.795	2.267	Open Manhole	1200
1.009	o	525	S16	195.563	190.240	4.798	Open Manhole	1800
5.000	o	225	S17	195.388	193.735	1.428	Open Manhole	1200
5.001	o	300	S18	192.682	191.105	1.277	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)
1.000	14.127	235.4	S2	199.217	197.170	1.747	Open Manhole	1200
1.001	17.150	228.7	S3	199.559	197.095	2.164	Open Manhole	1200
1.002	27.947	232.9	S7	199.945	196.975	2.670	Open Manhole	1500
2.000	12.351	54.9	S5	200.527	198.990	1.312	Open Manhole	1200
2.001	13.575	27.7	S6	200.248	198.500	1.523	Open Manhole	1200
2.002	14.525	10.0	S7	199.945	197.050	2.670	Open Manhole	1500
1.003	11.526	288.2	S8	199.740	196.860	2.505	Open Manhole	1500
1.004	21.979	293.1	S9	199.474	196.785	2.314	Open Manhole	1500
1.005	15.947	245.3	S11	199.269	196.720	2.174	Open Manhole	1500
3.000	15.325	23.6	S11	199.269	196.870	2.174	Open Manhole	1500
1.006	36.949	492.7	S12	198.439	196.535	1.454	Open Manhole	1500
1.007	30.683	38.4	S13	197.377	195.735	1.192	Open Manhole	1500
1.008	53.836	9.9	S16	195.563	190.240	4.798	Open Manhole	1800
4.000	30.350	14.8	S15	199.362	196.870	2.267	Open Manhole	1200
4.001	64.576	10.2	S16	195.563	190.465	4.798	Open Manhole	1800
1.009	19.702	22.0	S22	194.393	189.345	4.523	Open Manhole	1800
5.000	45.998	18.0	S18	192.682	191.180	1.277	Open Manhole	1200
5.001	30.106	21.4	S21	190.854	189.695	0.859	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)
6.000	o	825	S19	193.194	189.305	3.064	Open Manhole	1200
6.001	o	825	S20	191.579	189.200	1.554	Open Manhole	1800
5.002	o	825	S21	190.854	189.170	0.859	Open Manhole	1800
1.010	o	825	S22	194.393	189.045	4.523	Open Manhole	1800
1.011	o	225	S23	193.529	189.005	4.299	Open Manhole	1800
1.012	o	225	C1	193.425	188.985	4.215	Open Manhole	1200
1.013	o	225	C2	189.679	0.000	189.454	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)
6.000	51.000	485.7	S20	191.579	189.200	1.554	Open Manhole	1800
6.001	12.851	428.4	S21	190.854	189.170	0.859	Open Manhole	1800
5.002	62.344	498.8	S22	194.393	189.045	4.523	Open Manhole	1800
1.010	17.589	439.7	S23	193.529	189.005	3.699	Open Manhole	1800
1.011	2.279	114.0	C1	193.425	188.985	4.215	Open Manhole	1200
1.012	50.744	133.5	C2	189.679	188.605	0.849	Open Manhole	1200
1.013	2.828	0.0	Ex. CW	190.380	0.000	190.155	Open Manhole	1200

Setting Out Information - True Coordinates (Storm)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
1.000	S1	1200		411898.397	413174.617	
1.001	S2	1200		411903.689	413161.519	
1.002	S3	1200		411912.994	413147.112	
2.000	S4	1200		411914.218	413086.819	
2.001	S5	1200		411909.591	413098.271	
2.002	S6	1200		411912.654	413111.496	
1.003	S7	1500		411923.463	413121.200	
1.004	S8	1500		411934.150	413125.517	
1.005	S9	1500		411955.585	413130.376	
3.000	S10	1200		411983.690	413143.931	
1.006	S11	1500		411970.371	413136.350	
1.007	S12	1500		411984.678	413102.283	
1.008	S13	1500		411988.353	413071.821	
4.000	S14	1500		411937.282	413025.857	
4.001	S15	1200		411948.651	412997.716	
1.009	S16	1800		412008.525	413021.907	
5.000	S17	1200		411979.585	412942.974	
5.001	S18	1200		412022.234	412960.205	
6.000	S19	1200		412007.675	412940.463	

Setting Out Information - True Coordinates (Storm)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
6.001	S20	1800		412054.962	412959.568	
5.002	S21	1800		412050.148	412971.483	
1.010	S22	1800		412026.793	413029.288	
1.011	S23	1800		412041.716	413038.598	
1.012	C1	1200		412043.898	413039.256	
1.013	C2	1200		412092.480	413053.910	

PN	DSMH Name	Dia/Len (mm)	Width (mm)	DS Easting (m)	DS Northing (m)	Layout (North)
1.013	Ex. CW	1200		412093.817	413056.402	

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.101	0.101	0.101
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.034	0.034	0.034
2.000	-	-	100	0.078	0.078	0.078
2.001	-	-	100	0.000	0.000	0.000
2.002	-	-	100	0.033	0.033	0.033
1.003	-	-	100	0.000	0.000	0.000
1.004	-	-	100	0.026	0.026	0.026
1.005	-	-	100	0.058	0.058	0.058
3.000	-	-	100	0.062	0.062	0.062
1.006	-	-	100	0.017	0.017	0.017
1.007	-	-	100	0.084	0.084	0.084
1.008	-	-	100	0.163	0.163	0.163
4.000	-	-	100	0.087	0.087	0.087
4.001	-	-	100	0.127	0.127	0.127
1.009	-	-	100	0.120	0.120	0.120
5.000	-	-	100	0.067	0.067	0.067
5.001	-	-	100	0.073	0.073	0.073
6.000	-	-	100	0.000	0.000	0.000
6.001	-	-	100	0.000	0.000	0.000
5.002	-	-	100	0.107	0.107	0.107
1.010	-	-	100	0.030	0.030	0.030
1.011	-	-	100	0.000	0.000	0.000
1.012	-	-	100	0.000	0.000	0.000
1.013	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				1.267	1.267	1.267

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.013	Ex. CW	190.380	0.000	188.580	1200	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	1.000	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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	Summer Storms	Yes
Return Period (years)	100	Winter Storms	Yes
FEH Rainfall Version	2013	Cv (Summer)	1.000
Site Location GB 411968 413045 SE 11968 13045		Cv (Winter)	0.840
Data Type	Point Storm Duration (mins)		30

Online Controls for Storm

Hydro-Brake® Optimum Manhole: S23, DS/PN: 1.011, Volume (m³): 20.0

Unit Reference	MD-SHE-0093-5000-1900-5000
Design Head (m)	1.900
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	93
Invert Level (m)	189.005
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.900	5.0	Kick-Flo®	0.830	3.4
Flush-Flo™	0.406	4.3	Mean Flow over Head Range	-	4.0

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	2.9	0.800	3.6	2.000	5.1	4.000	7.1	7.000	9.2
0.200	3.9	1.000	3.7	2.200	5.4	4.500	7.5	7.500	9.5
0.300	4.2	1.200	4.0	2.400	5.6	5.000	7.9	8.000	9.8
0.400	4.3	1.400	4.3	2.600	5.8	5.500	8.2	8.500	10.1
0.500	4.2	1.600	4.6	3.000	6.2	6.000	8.6	9.000	10.4
0.600	4.1	1.800	4.9	3.500	6.7	6.500	8.9	9.500	10.7

Storage Structures for Storm

Tank or Pond Manhole: S20, DS/PN: 6.001

Invert Level (m) 189.200

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	963.5	1.600	963.5	1.601	0.0

2 year Return Period Summary of Critical Results by Maximum Outflow (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	2.000
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	Data Type Point
FEH Rainfall Version		2013	Cv (Summer) 1.000
Site Location	GB 411968 413045 SE 11968 13045		Cv (Winter) 1.000

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	2, 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)
1.000	S1	15 Summer	2	+0%	30/15 Summer				197.341	-0.189
1.001	S2	15 Summer	2	+0%	30/15 Summer				197.278	-0.192
1.002	S3	15 Summer	2	+0%	30/15 Summer				197.215	-0.180
2.000	S4	15 Summer	2	+0%					199.287	-0.153
2.001	S5	15 Summer	2	+0%					199.050	-0.165
2.002	S6	15 Summer	2	+0%					198.553	-0.172
1.003	S7	15 Summer	2	+0%	30/15 Summer				197.075	-0.200
1.004	S8	15 Summer	2	+0%	30/15 Summer				197.036	-0.199
1.005	S9	15 Summer	2	+0%	30/15 Summer				196.968	-0.192
3.000	S10	15 Summer	2	+0%					197.570	-0.175
1.006	S11	15 Summer	2	+0%	30/15 Summer				196.827	-0.233
1.007	S12	15 Summer	2	+0%					196.651	-0.334
1.008	S13	30 Summer	2	+0%					195.745	-0.440
4.000	S14	15 Summer	2	+0%					198.976	-0.174
4.001	S15	15 Summer	2	+0%					196.859	-0.236
1.009	S16	30 Summer	2	+0%	100/15 Summer				190.390	-0.375
5.000	S17	15 Summer	2	+0%					193.782	-0.178
5.001	S18	15 Summer	2	+0%					191.169	-0.236
6.000	S19	1440 Summer	2	+0%	100/180 Summer				189.503	-0.627
6.001	S20	600 Winter	2	+0%	100/120 Summer				189.484	-0.541
5.002	S21	15 Summer	2	+0%	30/15 Summer				189.677	-0.318
1.010	S22	15 Summer	2	+0%	30/15 Summer				189.758	-0.112
1.011	S23	1440 Summer	2	+0%	2/15 Summer				189.514	0.284
1.012	C1	1440 Summer	2	+0%					189.032	-0.178
1.013	C2	1440 Summer	2	+0%					0.059	-0.166

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

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1	0.000	0.29		17.3	OK	
1.001	S2	0.000	0.28		17.4	OK	
1.002	S3	0.000	0.33		21.6	OK	
2.000	S4	0.000	0.22		13.5	OK	
2.001	S5	0.000	0.16		13.4	OK	
2.002	S6	0.000	0.13		18.1	OK	
1.003	S7	0.000	0.44		39.4	OK	
1.004	S8	0.000	0.43		42.6	OK	
1.005	S9	0.000	0.48		49.3	OK	
3.000	S10	0.000	0.11		10.7	OK	
1.006	S11	0.000	0.46		58.7	OK	
1.007	S12	0.000	0.15		68.1	OK	
1.008	S13	0.000	0.06		86.2	OK	
4.000	S14	0.000	0.12		15.1	OK	
4.001	S15	0.000	0.10		33.6	OK	
1.009	S16	0.000	0.18		129.8	OK	
5.000	S17	0.000	0.10		11.6	OK	
5.001	S18	0.000	0.10		22.3	OK	
6.000	S19	0.000	0.00		0.3	OK	
6.001	S20	0.000	0.03		11.0	OK	
5.002	S21	0.000	0.02		10.7	OK	
1.010	S22	0.000	0.07		29.9	OK	
1.011	S23	0.000	0.15		4.3	SURCHARGED	
1.012	C1	0.000	0.10		4.3	OK	
1.013	C2	0.000	0.16		4.3	OK	

30 year Return Period Summary of Critical Results by Maximum Outflow (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	2.000
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	Data Type	Point
FEH Rainfall Version	2013	Cv (Summer)	1.000
Site Location	GB 411968 413045 SE 11968 13045	Cv (Winter)	1.000

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	2, 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)
1.000	S1	15 Summer	30	+0%	30/15 Summer				197.572	0.042
1.001	S2	15 Summer	30	+0%	30/15 Summer				197.492	0.022
1.002	S3	15 Summer	30	+0%	30/15 Summer				197.403	0.008
2.000	S4	15 Summer	30	+0%					199.334	-0.106
2.001	S5	15 Summer	30	+0%					199.086	-0.129
2.002	S6	15 Summer	30	+0%					198.590	-0.135
1.003	S7	15 Summer	30	+0%	30/15 Summer				197.320	0.045
1.004	S8	15 Summer	30	+0%	30/15 Summer				197.256	0.021
1.005	S9	15 Summer	30	+0%	30/15 Summer				197.171	0.011
3.000	S10	15 Summer	30	+0%					197.600	-0.145
1.006	S11	15 Summer	30	+0%	30/15 Summer				197.062	0.002
1.007	S12	15 Summer	30	+0%					196.723	-0.262
1.008	S13	15 Summer	30	+0%					195.803	-0.382
4.000	S14	15 Summer	30	+0%					199.007	-0.143
4.001	S15	15 Summer	30	+0%					196.905	-0.190
1.009	S16	15 Summer	30	+0%	100/15 Summer				190.629	-0.136
5.000	S17	15 Summer	30	+0%					193.810	-0.150
5.001	S18	15 Summer	30	+0%					191.214	-0.191
6.000	S19	60 Winter	30	+0%	100/180 Summer				189.576	-0.554
6.001	S20	1440 Winter	30	+0%	100/120 Summer				189.907	-0.118
5.002	S21	15 Winter	30	+0%	30/15 Summer				190.282	0.287
1.010	S22	15 Summer	30	+0%	30/15 Summer				190.447	0.577
1.011	S23	15 Summer	30	+0%	2/15 Summer				190.443	1.213
1.012	C1	15 Summer	30	+0%					189.033	-0.177
1.013	C2	15 Summer	30	+0%					0.059	-0.166

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

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1	0.000	0.70		42.0	SURCHARGED	
1.001	S2	0.000	0.64		39.7	SURCHARGED	
1.002	S3	0.000	0.76		50.1	SURCHARGED	
2.000	S4	0.000	0.54		32.7	OK	
2.001	S5	0.000	0.38		32.5	OK	
2.002	S6	0.000	0.33		47.8	OK	
1.003	S7	0.000	0.97		86.9	SURCHARGED	
1.004	S8	0.000	0.94		93.0	SURCHARGED	
1.005	S9	0.000	1.08		111.1	SURCHARGED	
3.000	S10	0.000	0.27		26.0	OK	
1.006	S11	0.000	1.08		137.3	SURCHARGED	
1.007	S12	0.000	0.35		159.4	OK	
1.008	S13	0.000	0.16		220.1	OK	
4.000	S14	0.000	0.29		36.5	OK	
4.001	S15	0.000	0.29		96.1	OK	
1.009	S16	0.000	0.53		386.4	OK	
5.000	S17	0.000	0.24		28.2	OK	
5.001	S18	0.000	0.28		62.3	OK	
6.000	S19	0.000	0.00		0.5	OK	
6.001	S20	0.000	0.03		10.3	OK	
5.002	S21	0.000	0.02		13.0	SURCHARGED	
1.010	S22	0.000	0.13		57.7	SURCHARGED	
1.011	S23	0.000	0.16		4.5	SURCHARGED	
1.012	C1	0.000	0.10		4.5	OK	
1.013	C2	0.000	0.16		4.4	OK	

100 year Return Period Summary of Critical Results by Maximum Outflow (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	2.000
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	Data Type	Point
FEH Rainfall Version	2013	Cv (Summer)	1.000
Site Location	GB 411968 413045 SE 11968 13045	Cv (Winter)	1.000

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	2, 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)
1.000	S1	15 Summer	100	+40%	30/15 Summer				198.415	0.885
1.001	S2	15 Summer	100	+40%	30/15 Summer				198.333	0.863
1.002	S3	15 Summer	100	+40%	30/15 Summer				198.247	0.852
2.000	S4	15 Summer	100	+40%					199.413	-0.027
2.001	S5	15 Summer	100	+40%					199.129	-0.086
2.002	S6	15 Summer	100	+40%					198.628	-0.097
1.003	S7	15 Summer	100	+40%	30/15 Summer				198.029	0.754
1.004	S8	15 Summer	100	+40%	30/15 Summer				197.851	0.616
1.005	S9	15 Summer	100	+40%	30/15 Summer				197.603	0.443
3.000	S10	15 Summer	100	+40%					197.634	-0.111
1.006	S11	15 Summer	100	+40%	30/15 Summer				197.299	0.239
1.007	S12	15 Summer	100	+40%					196.812	-0.173
1.008	S13	15 Summer	100	+40%					195.859	-0.326
4.000	S14	15 Summer	100	+40%					199.042	-0.108
4.001	S15	15 Summer	100	+40%					196.951	-0.144
1.009	S16	15 Summer	100	+40%	100/15 Summer				191.497	0.732
5.000	S17	15 Summer	100	+40%					193.840	-0.120
5.001	S18	15 Summer	100	+40%					191.260	-0.145
6.000	S19	15 Winter	100	+40%	100/180 Summer				189.596	-0.534
6.001	S20	960 Summer	100	+40%	100/120 Summer				190.611	0.586
5.002	S21	120 Winter	100	+40%	30/15 Summer				190.096	0.101
1.010	S22	15 Summer	100	+40%	30/15 Summer				191.240	1.370
1.011	S23	15 Summer	100	+40%	2/15 Summer				191.263	2.033
1.012	C1	1440 Winter	100	+40%					189.035	-0.175
1.013	C2	15 Summer	100	+40%					0.066	-0.159

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

PN	US/MH Name	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S1	0.000	1.14		68.0	SURCHARGED	
1.001	S2	0.000	1.11		69.1	SURCHARGED	
1.002	S3	0.000	1.32		86.2	SURCHARGED	
2.000	S4	0.000	0.99		59.7	OK	
2.001	S5	0.000	0.70		59.9	OK	
2.002	S6	0.000	0.61		87.8	OK	
1.003	S7	0.000	1.83		163.1	SURCHARGED	
1.004	S8	0.000	1.81		178.8	SURCHARGED	
1.005	S9	0.000	2.03		209.4	SURCHARGED	
3.000	S10	0.000	0.51		48.0	OK	
1.006	S11	0.000	2.03		258.6	SURCHARGED	
1.007	S12	0.000	0.67		301.1	OK	
1.008	S13	0.000	0.30		412.7	OK	
4.000	S14	0.000	0.53		67.4	OK	
4.001	S15	0.000	0.53		177.2	OK	
1.009	S16	0.000	0.91		660.8	SURCHARGED	
5.000	S17	0.000	0.44		51.9	OK	
5.001	S18	0.000	0.52		114.9	OK	
6.000	S19	0.000	0.00		0.5	OK	
6.001	S20	0.000	0.09		35.9	SURCHARGED	
5.002	S21	0.000	0.04		23.5	SURCHARGED	
1.010	S22	0.000	0.16		71.7	SURCHARGED	
1.011	S23	0.000	0.17		4.9	SURCHARGED	
1.012	C1	0.000	0.11		4.8	OK	
1.013	C2	0.000	0.18		4.9	OK	