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240 Blackfriars Road London SE1 8NW	Oldlands Farm - Phase 2 SW Drainage Design	
Date 17/10/2018 08:56 File SW drainage model 181004.MDX	Designed by CCT Checked by CL	
Micro Drainage		Network 2018.1.1

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
SW1	2.500	1.000	Open Manhole	1800	1.000	1.500	375				
SW2	2.500	1.116	Open Manhole	1500	1.001	1.384	375	1.000	1.384	375	
SW3	2.500	1.244	Open Manhole	1200	1.002	1.256	375	1.001	1.256	375	
SW4 (CP)	2.800	1.609	Open Manhole	1200	1.003	1.191	375	1.002	1.191	375	
SW5: Tank 2 inlet (dummy)	2.950	1.765	Open Manhole	1200	1.004	1.185	375	1.003	1.185	375	
SW6: TANK 2 (dummy)	3.025	1.878	Open Manhole	1200	1.005	1.147	375	1.004	1.147	375	
SW7: Tank 2 outlet (dummy)	3.100	1.992	Open Manhole	1200	1.006	1.108	375	1.005	1.108	375	
SW8: CH	2.400	0.750	Junction		2.000	1.650	150				
SW9: CH	2.400	0.993	Junction		2.001	1.407	225	2.000	1.482	150	
SW10	2.500	1.160	Junction		2.002	1.340	225	2.001	1.340	225	
SW11 (CP)	2.500	1.243	Open Manhole	1050	2.003	1.257	300	2.002	1.332	225	
SW12 (CP)	3.100	2.124	Open Manhole	1200	1.007	0.976	375	1.006	0.976	375	
								2.003	1.202	300	151
SW13: oversized dual pipework	3.300	2.591	Open Manhole	3000	1.008	0.709	45	1.007	0.934	375	
SW14: oversized dual pipework	2.500	1.500	Open Manhole	3000	3.000	1.000	45				
SW15: Orifice Chamber	2.550	1.989	Open Manhole	3000	1.009	0.561	675	1.008	0.636	45	
								3.000	0.971	45	335
SW16: CH	2.500	0.750	Junction		4.000	1.750	150				
SW17: CH	2.400	0.750	Junction		5.000	1.650	150				
SW18	2.300	0.869	Junction		4.001	1.431	225	4.000	1.506	150	
								5.000	1.609	150	103

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Micro Drainage		Network 2018.1.1

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
SW19 (CP)	2.400	1.924	Open Manhole	1350	1.010	0.476	675	1.009	0.476	675	

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
								4.001	1.419	225	493
SW20: Tank 1 inlet (dummy)	2.400	1.939	Open Manhole	1350	1.011	0.461	675	1.010	0.461	675	
SW21: TANK 1 (dummy)	2.400	1.955	Open Manhole	1500	1.012	0.445	675	1.011	0.445	675	
SW22: Tank 1 outlet (dummy)	2.400	1.971	Open Manhole	1500	1.013	0.429	675	1.012	0.429	675	
SW23 (CP): Hydrobrake Chamber	2.400	1.980	Open Manhole	1500	1.014	0.420	675	1.013	0.420	675	
SW24: PI inlet (dummy)	2.200	1.786	Open Manhole	1500	1.015	0.414	675	1.014	0.414	675	
SW25: PI outlet (dummy)	1.500	1.113	Open Manhole	1350	1.016	0.387	600	1.015	0.387	675	
SWHW1	1.100	0.721	Open Manhole	0		OUTFALL		1.016	0.379	600	
SW26	2.400	1.725	Open Manhole	1350	6.000	0.675	600				
SW27	2.700	2.073	Open Manhole	1350	6.001	0.627	600	6.000	0.627	600	
SW28: Tankk 3 inlet-a (dummy)	2.700	2.080	Open Manhole	1350	6.002	0.620	600	6.001	0.620	600	
SW29: TANK 3 (dummy)	2.650	2.058	Open Manhole	1350	6.003	0.592	600	6.002	0.592	600	
SW27a	2.700	0.900	Open Manhole	1050	7.000	1.800	150				
SW31 Tank 3 inlet-b (dummy)	2.600	0.852	Open Manhole	1050	7.001	1.748	150	7.000	1.748	150	
SW30: Tank 3 outlet (dummy)	2.600	2.036	Open Manhole	1350	6.004	0.564	600	6.003	0.564	600	
								7.001	1.014	150	
SW31	2.600	2.044	Open Manhole	1350	6.005	0.556	600	6.004	0.556	600	
SW32	2.400	1.916	Open Manhole	1350	6.006	0.484	525	6.005	0.484	600	
SW33	2.400	1.125	Open Manhole	1200	8.000	1.275	450				
SW34: Orifice Chamber	2.400	2.057	Open Manhole	1800	6.007	0.343	600	6.006	0.343	525	
								8.000	0.840	450	497

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
SW35: PI inlet (dummy)	2.400	2.061	Open Manhole	1800	6.008	0.339	600	6.007	0.339	600	
SW36: PI outlet (dummy)	2.350	2.014	Open Manhole	1800	6.009	0.336	600	6.008	0.336	600	
SW37	2.300	1.969	Open Manhole	1800	6.010	0.331	600	6.009	0.331	600	
SW40	1.288	1.076	Junction		9.000	0.212	600				
SW41	1.494	1.284	Junction		9.001	0.210	600	9.000	0.210	600	
SW40: Hydrobrake HW2 (dummy)	2.200	2.020	Open Manhole	1800	6.011	0.180	600	6.010	0.180	600	
								9.001	0.180	600	
SWHW2	1.200	1.050	Open Manhole	0		OUTFALL		6.011	0.150	600	
SW41	2.400	1.200	Open Manhole	1200	10.000	1.200	375				
SW42	2.400	1.269	Open Manhole	1200	10.001	1.131	375	10.000	1.131	375	
SW43: Tank 4 inlet-a (dummy)	2.400	1.291	Open Manhole	1200	10.002	1.109	375	10.001	1.109	375	
SW44	2.320	1.050	Open Manhole	1050	11.000	1.270	150				
SW45: Tank 4 inlet-b (dummy)	2.400	1.373	Open Manhole	1200	11.001	1.027	375	11.000	1.252	150	
SW46: TANK 4 (dummy)	2.400	1.403	Open Manhole	1200	10.003	0.997	375	10.002	0.997	375	
								11.001	0.998	375	1
SW47: Tank 4 outlet (dummy)	2.400	1.422	Open Manhole	1200	10.004	0.978	375	10.003	0.978	375	
SW48: Orifice Chamber	2.380	1.415	Open Manhole	1200	10.005	0.965	375	10.004	0.965	375	
SW49	3.300	1.350	Open Manhole	3000	12.000	1.950	43				
SW50	2.850	1.350	Open Manhole	3000	12.001	1.500	43	12.000	1.808	43	308
SW51	2.400	1.350	Open Manhole	3000	13.000	1.050	43				
SW52: Orififce Chamber	2.200	1.350	Open Manhole	3000	12.002	0.850	525	12.001	1.331	43	406

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
SW53	2.400	1.817	Open Manhole	1350	10.006	0.583	525	13.000	0.927	43	2
SW54: Tank 5 inlet (dummy)	2.400	1.823	Open Manhole	1350	10.007	0.577	525	10.005	0.733	375	204
SW55: TANK 5 (dummy)	2.400	1.874	Open Manhole	1350	10.008	0.526	525	12.002	0.787	525	
SW56: Tank 5 outlet (dummy)	2.400	1.925	Open Manhole	1350	10.009	0.475	525	10.006	0.577	525	447
SW57	2.400	1.350	Open Manhole	1200	14.000	1.050	450	10.007	0.526	525	
SW58: Orifice Chamber	2.400	1.932	Open Manhole	1350	10.010	0.468	450	10.008	0.475	525	447
SW59: PI inlet (dummy)	2.300	1.843	Open Manhole	1200	10.011	0.457	300	14.000	0.468	525	
SW60: PI outlet (dummy)	2.100	1.649	Open Manhole	1050	10.012	0.451	300	10.009	0.468	525	447
SW61	1.900	1.456	Open Manhole	1050	10.013	0.444	300	14.000	0.915	450	
SW62: Dummy HW3	1.700	1.266	Open Manhole	900	10.014	0.434	300	10.010	0.457	450	447
SWHW3	1.200	0.768	Open Manhole	0		OUTFALL		10.011	0.451	300	
SW63: Overflow Flood Storage	2.350	1.150	Open Manhole	1050	15.000	1.200	225	10.012	0.444	300	447
SWOverflow Pond	2.350	1.161	Open Manhole	0		OUTFALL		10.013	0.434	300	
								10.014	0.432	300	
								15.000	1.189	225	

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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	375	SW1	2.500	1.500	0.625	Open Manhole	1800
1.001	o	375	SW2	2.500	1.384	0.741	Open Manhole	1500
1.002	o	375	SW3	2.500	1.256	0.869	Open Manhole	1200
1.003	o	375	SW4 (CP)	2.800	1.191	1.234	Open Manhole	1200
1.004	o	375	SW5: Tank 2 inlet (dummy)	2.950	1.185	1.390	Open Manhole	1200
1.005	o	375	SW6: TANK 2 (dummy)	3.025	1.147	1.503	Open Manhole	1200
1.006	o	375	SW7: Tank 2 outlet (dummy)	3.100	1.108	1.617	Open Manhole	1200
2.000	o	150	SW8: CH	2.400	1.650	0.600	Junction	
2.001	o	225	SW9: CH	2.400	1.407	0.768	Junction	

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	26.007	224.2	SW2	2.500	1.384	0.741	Open Manhole	1500
1.001	47.931	374.5	SW3	2.500	1.256	0.869	Open Manhole	1200
1.002	24.277	373.5	SW4 (CP)	2.800	1.191	1.234	Open Manhole	1200
1.003	2.396	399.3	SW5: Tank 2 inlet (dummy)	2.950	1.185	1.390	Open Manhole	1200
1.004	14.390	375.0	SW6: TANK 2 (dummy)	3.025	1.147	1.503	Open Manhole	1200
1.005	14.390	375.0	SW7: Tank 2 outlet (dummy)	3.100	1.108	1.617	Open Manhole	1200
1.006	1.881	14.2	SW12 (CP)	3.100	0.976	1.749	Open Manhole	1200
2.000	25.128	150.0	SW9: CH	2.400	1.482	0.768	Junction	
2.001	15.277	225.0	SW10	2.500	1.340	0.935	Junction	

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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)
2.002	o	225	SW10	2.500	1.340	0.935	Junction	
2.003	o	300	SW11 (CP)	2.500	1.257	0.943	Open Manhole	1050
1.007	o	375	SW12 (CP)	3.100	0.976	1.749	Open Manhole	1200
1.008	oo	45	SW13: oversized dual pipework	3.300	0.709	1.991	Open Manhole	3000
3.000	oo	45	SW14: oversized dual pipework	2.500	1.000	0.900	Open Manhole	3000
1.009	o	675	SW15: Orifice Chamber	2.550	0.561	1.314	Open Manhole	3000

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)
2.002	1.827	228.4	SW11 (CP)	2.500	1.332	0.943	Open Manhole	1050
2.003	16.608	302.0	SW12 (CP)	3.100	1.202	1.598	Open Manhole	1200
1.007	15.828	376.9	SW13: oversized dual pipework	3.300	0.934	1.991	Open Manhole	3000
1.008	36.365	500.0	SW15: Orifice Chamber	2.550	0.636	1.314	Open Manhole	3000
3.000	14.585	502.9	SW15: Orifice Chamber	2.550	0.971	0.979	Open Manhole	3000
1.009	42.671	502.0	SW19 (CP)	2.400	0.476	1.249	Open Manhole	1350

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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)
4.000	o	150	SW16: CH	2.500	1.750	0.600	Junction	
5.000	o	150	SW17: CH	2.400	1.650	0.600	Junction	
4.001	o	225	SW18	2.300	1.431	0.644	Junction	
1.010	o	675	SW19 (CP)	2.400	0.476	1.249	Open Manhole	1350
1.011	o	675	SW20: Tank 1 inlet (dummy)	2.400	0.461	1.264	Open Manhole	1350
1.012	o	675	SW21: TANK 1 (dummy)	2.400	0.445	1.280	Open Manhole	1500
1.013	o	675	SW22: Tank 1 outlet (dummy)	2.400	0.429	1.296	Open Manhole	1500

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)
4.000	36.595	150.0	SW18	2.300	1.506	0.644	Junction	
5.000	6.108	150.0	SW18	2.300	1.609	0.541	Junction	
4.001	2.727	227.3	SW19 (CP)	2.400	1.419	0.756	Open Manhole	1350
1.010	8.879	591.9	SW20: Tank 1 inlet (dummy)	2.400	0.461	1.264	Open Manhole	1350
1.011	9.173	573.3	SW21: TANK 1 (dummy)	2.400	0.445	1.280	Open Manhole	1500
1.012	9.516	594.7	SW22: Tank 1 outlet (dummy)	2.400	0.429	1.296	Open Manhole	1500
1.013	5.502	611.3	SW23 (CP): Hydrobrake Chamber	2.400	0.420	1.305	Open Manhole	1500

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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)
1.014	o	675	SW23 (CP): Hydrobrake Chamber	2.400	0.420	1.305	Open Manhole	1500
1.015	o	675	SW24: PI inlet (dummy)	2.200	0.414	1.111	Open Manhole	1500
1.016	o	600	SW25: PI outlet (dummy)	1.500	0.387	0.513	Open Manhole	1350
6.000	o	600	SW26	2.400	0.675	1.125	Open Manhole	1350
6.001	o	600	SW27	2.700	0.627	1.473	Open Manhole	1350
6.002	o	600	SW28: Tankk 3 inlet-a (dummy)	2.700	0.620	1.480	Open Manhole	1350
6.003	o	600	SW29: TANK 3 (dummy)	2.650	0.592	1.458	Open Manhole	1350
7.000	o	150	SW27a	2.700	1.800	0.750	Open Manhole	1050

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)
1.014	4.096	682.7	SW24: PI inlet (dummy)	2.200	0.414	1.111	Open Manhole	1500
1.015	1.638	60.7	SW25: PI outlet (dummy)	1.500	0.387	0.438	Open Manhole	1350
1.016	4.804	600.5	SWHW1	1.100	0.379	0.121	Open Manhole	0
6.000	24.208	504.3	SW27	2.700	0.627	1.473	Open Manhole	1350
6.001	3.667	523.9	SW28: Tankk 3 inlet-a (dummy)	2.700	0.620	1.480	Open Manhole	1350
6.002	13.881	495.8	SW29: TANK 3 (dummy)	2.650	0.592	1.458	Open Manhole	1350
6.003	13.881	495.8	SW30: Tank 3 outlet (dummy)	2.600	0.564	1.436	Open Manhole	1350
7.000	7.049	135.6	SW31 Tank 3 inlet-b (dummy)	2.600	1.748	0.702	Open Manhole	1050

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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)
7.001	o	150	SW31 Tank 3 inlet-b (dummy)	2.600	1.748	0.702	Open Manhole	1050
6.004	o	600	SW30: Tank 3 outlet (dummy)	2.600	0.564	1.436	Open Manhole	1350
6.005	o	600	SW31	2.600	0.556	1.444	Open Manhole	1350
6.006	o	525	SW32	2.400	0.484	1.391	Open Manhole	1350
8.000	o	450	SW33	2.400	1.275	0.525	Open Manhole	1200
6.007	o	600	SW34: Orifice Chamber	2.400	0.343	1.457	Open Manhole	1800
6.008	o	600	SW35: PI inlet (dummy)	2.400	0.339	1.461	Open Manhole	1800

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)
7.001	12.857	17.5	SW30: Tank 3 outlet (dummy)	2.600	1.014	1.436	Open Manhole	1350
6.004	4.130	516.3	SW31	2.600	0.556	1.444	Open Manhole	1350
6.005	35.814	497.4	SW32	2.400	0.484	1.316	Open Manhole	1350
6.006	70.406	499.3	SW34: Orifice Chamber	2.400	0.343	1.532	Open Manhole	1800
8.000	80.422	184.9	SW34: Orifice Chamber	2.400	0.840	0.960	Open Manhole	1800
6.007	1.989	497.3	SW35: PI inlet (dummy)	2.400	0.339	1.461	Open Manhole	1800
6.008	1.698	566.0	SW36: PI outlet (dummy)	2.350	0.336	1.414	Open Manhole	1800

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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)
6.009	o	600	SW36: PI outlet (dummy)	2.350	0.336	1.414	Open Manhole	1800
6.010	o	600	SW37	2.300	0.331	1.369	Open Manhole	1800
9.000	o	600	SW40	1.288	0.212	0.476	Junction	
9.001	o	600	SW41	1.494	0.210	0.684	Junction	
6.011	o	600	SW40: Hydrobrake HW2 (dummy)	2.200	0.180	1.420	Open Manhole	1800
10.000	o	375	SW41	2.400	1.200	0.825	Open Manhole	1200
10.001	o	375	SW42	2.400	1.131	0.894	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)
6.009	2.398	479.6	SW37	2.300	0.331	1.369	Open Manhole	1800
6.010	9.851	65.2	SW40: Hydrobrake HW2 (dummy)	2.200	0.180	1.420	Open Manhole	1800
9.000	1.110	555.0	SW41	1.494	0.210	0.684	Junction	
9.001	8.295	276.5	SW40: Hydrobrake HW2 (dummy)	2.200	0.180	1.420	Open Manhole	1800
6.011	9.310	310.3	SWHW2	1.200	0.150	0.450	Open Manhole	0
10.000	20.592	298.4	SW42	2.400	1.131	0.894	Open Manhole	1200
10.001	6.502	295.5	SW43: Tank 4 inlet-a (dummy)	2.400	1.109	0.916	Open Manhole	1200

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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)
10.002	o	375	SW43: Tank 4 inlet-a (dummy)	2.400	1.109	0.916	Open Manhole	1200
11.000	o	150	SW44	2.320	1.270	0.900	Open Manhole	1050
11.001	o	375	SW45: Tank 4 inlet-b (dummy)	2.400	1.027	0.998	Open Manhole	1200
10.003	o	375	SW46: TANK 4 (dummy)	2.400	0.997	1.028	Open Manhole	1200
10.004	o	375	SW47: Tank 4 outlet (dummy)	2.400	0.978	1.047	Open Manhole	1200
10.005	o	375	SW48: Orifice Chamber	2.380	0.965	1.040	Open Manhole	1200
12.000	oo	43	SW49	3.300	1.950	0.900	Open Manhole	3000

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)
10.002	11.464	102.4	SW46: TANK 4 (dummy)	2.400	0.997	1.028	Open Manhole	1200
11.000	2.741	152.3	SW45: Tank 4 inlet-b (dummy)	2.400	1.252	0.998	Open Manhole	1200
11.001	10.908	376.1	SW46: TANK 4 (dummy)	2.400	0.998	1.027	Open Manhole	1200
10.003	7.161	376.9	SW47: Tank 4 outlet (dummy)	2.400	0.978	1.047	Open Manhole	1200
10.004	4.730	363.8	SW48: Orifice Chamber	2.380	0.965	1.040	Open Manhole	1200
10.005	25.233	108.8	SW53	2.400	0.733	1.292	Open Manhole	1350
12.000	70.949	499.6	SW50	2.850	1.808	0.592	Open Manhole	3000

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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)
12.001	oo	43	SW50	2.850	1.500	0.900	Open Manhole	3000
13.000	oo	43	SW51	2.400	1.050	0.900	Open Manhole	3000
12.002	o	525	SW52: Orifce Chamber	2.200	0.850	0.825	Open Manhole	3000
10.006	o	525	SW53	2.400	0.583	1.292	Open Manhole	1350
10.007	o	525	SW54: Tank 5 inlet (dummy)	2.400	0.577	1.298	Open Manhole	1350
10.008	o	525	SW55: TANK 5 (dummy)	2.400	0.526	1.349	Open Manhole	1350
10.009	o	525	SW56: Tank 5 outlet (dummy)	2.400	0.475	1.400	Open Manhole	1350

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)
12.001	84.665	501.0	SW52: Orifce Chamber	2.200	1.331	0.419	Open Manhole	3000
13.000	61.418	499.3	SW52: Orifce Chamber	2.200	0.927	0.823	Open Manhole	3000
12.002	31.357	497.7	SW53	2.400	0.787	1.088	Open Manhole	1350
10.006	3.052	508.7	SW54: Tank 5 inlet (dummy)	2.400	0.577	1.298	Open Manhole	1350
10.007	25.309	496.3	SW55: TANK 5 (dummy)	2.400	0.526	1.349	Open Manhole	1350
10.008	25.309	496.3	SW56: Tank 5 outlet (dummy)	2.400	0.475	1.400	Open Manhole	1350
10.009	3.351	478.7	SW58: Orifice Chamber	2.400	0.468	1.407	Open Manhole	1350

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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)
14.000	o	450	SW57	2.400	1.050	0.900	Open Manhole	1200
10.010	o	450	SW58: Orifice Chamber	2.400	0.468	1.482	Open Manhole	1350
10.011	o	300	SW59: PI inlet (dummy)	2.300	0.457	1.543	Open Manhole	1200
10.012	o	300	SW60: PI outlet (dummy)	2.100	0.451	1.349	Open Manhole	1050
10.013	o	300	SW61	1.900	0.444	1.156	Open Manhole	1050
10.014	o	300	SW62: Dummy HW3	1.700	0.434	0.966	Open Manhole	900
15.000	o	225	SW63: Overflow Flood Storage	2.350	1.200	0.925	Open Manhole	1050

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)
14.000	60.556	448.6	SW58: Orifice Chamber	2.400	0.915	1.035	Open Manhole	1350
10.010	4.984	453.1	SW59: PI inlet (dummy)	2.300	0.457	1.393	Open Manhole	1200
10.011	1.652	275.3	SW60: PI outlet (dummy)	2.100	0.451	1.349	Open Manhole	1050
10.012	2.129	304.1	SW61	1.900	0.444	1.156	Open Manhole	1050
10.013	2.952	295.2	SW62: Dummy HW3	1.700	0.434	0.966	Open Manhole	900
10.014	0.503	251.3	SWHW3	1.200	0.432	0.468	Open Manhole	0
15.000	1.905	173.2	SWOverflow Pond	2.350	1.189	0.936	Open Manhole	0

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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)
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1.016	SWHW1	1.100	0.379	0.350	0	0
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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)
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6.011	SWHW2	1.200	0.150	0.300	0	0
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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)
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10.014	SWHW3	1.200	0.432	0.300	0	0
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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)
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15.000	SWOverflow Pond	2.350	1.189	1.100	0	0
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Simulation Criteria for Storm

Volumetric Runoff Coeff 0.840 Manhole Headloss Coeff (Global) 0.500 Inlet Coefficient 0.800
 Areal Reduction Factor 1.000 Foul Sewage per hectare (l/s) 0.000 Flow per Person per Day (l/per/day) 0.000
 Hot Start (mins) 0 Additional Flow - % of Total Flow 0.000 Run Time (mins) 5000
 Hot Start Level (mm) 0 MADD Factor * 10m³/ha Storage 2.500 Output Interval (mins) 6

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 10 Number of Storage Structures 5 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Return Period (years) 30 Ratio R 0.350 Cv (Winter) 0.840
 Region England and Wales Profile Type Winter Storm Duration (mins) 360

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Online Controls for Storm

Orifice Manhole: SW12 (CP), DS/PN: 1.007, Volume (m³): 3.6

Diameter (m) 0.150 Discharge Coefficient 0.600 Invert Level (m) 0.976

Orifice Manhole: SW15: Orifice Chamber, DS/PN: 1.009, Volume (m³): 39.5

Diameter (m) 0.150 Discharge Coefficient 0.600 Invert Level (m) 0.636

Hydro-Brake® Optimum Manhole: SW23 (CP): Hydrobrake Chamber, DS/PN: 1.014, Volume (m³): 4.9

Unit Reference	MD-SHE-0094-5000-1800-5000	Sump Available	Yes
Design Head (m)	1.800	Diameter (mm)	94
Design Flow (l/s)	5.0	Invert Level (m)	0.420
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	150
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.800	5.0	Kick-Flo®	0.838	3.5
Flush-Flo™	0.411	4.4	Mean Flow over Head Range	-	4.1

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)	Depth (m)	Flow (l/s)
0.100	3.0	0.300	4.3	0.500	4.4	0.800	3.7	1.200	4.1	1.600	4.7
0.200	4.0	0.400	4.4	0.600	4.3	1.000	3.8	1.400	4.4	1.800	5.0

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Hydro-Brake® Optimum Manhole: SW23 (CP): Hydrobrake Chamber, DS/PN: 1.014, Volume (m³): 4.9

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)	Depth (m)	Flow (l/s)
2.000	5.2	2.600	5.9	4.000	7.3	5.500	8.4	7.000	9.5	8.500	10.4
2.200	5.5	3.000	6.3	4.500	7.7	6.000	8.8	7.500	9.8	9.000	10.7
2.400	5.7	3.500	6.8	5.000	8.1	6.500	9.1	8.000	10.1	9.500	11.0

Orifice Manhole: SW31, DS/PN: 6.005, Volume (m³): 3.7

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 0.556

Orifice Manhole: SW34: Orifice Chamber, DS/PN: 6.007, Volume (m³): 32.7

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 0.343

Hydro-Brake® Optimum Manhole: SW40: Hydrobrake HW2 (dummy), DS/PN: 6.011, Volume (m³): 9.5

Unit Reference	MD-SCL-0140-1180-1600-1180	Sump Available	Yes
Design Head (m)	1.600	Diameter (mm)	140
Design Flow (l/s)	11.8	Invert Level (m)	0.180
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	225
Objective	Minimise blockage risk	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.600	11.8	Kick-Flo®	0.870	8.9
Flush-Flo™	0.364	11.8	Mean Flow over Head Range	-	10.1

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

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Hydro-Brake® Optimum Manhole: SW40: Hydrobrake HW2 (dummy), DS/PN: 6.011, Volume (m³): 9.5

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)	Depth (m)	Flow (l/s)
0.100	5.6	0.600	11.2	1.600	11.8	2.600	14.8	5.000	20.2	7.500	24.6
0.200	11.1	0.800	9.8	1.800	12.5	3.000	15.9	5.500	21.2	8.000	25.3
0.300	11.7	1.000	9.5	2.000	13.1	3.500	17.1	6.000	22.1	8.500	26.1
0.400	11.8	1.200	10.3	2.200	13.7	4.000	18.2	6.500	22.9	9.000	26.8
0.500	11.6	1.400	11.1	2.400	14.3	4.500	19.2	7.000	23.8	9.500	27.5

Orifice Manhole: SW48: Orifice Chamber, DS/PN: 10.005, Volume (m³): 2.0

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 0.965

Orifice Manhole: SW52: Orifice Chamber, DS/PN: 12.002, Volume (m³): 54.1

Diameter (m) 0.300 Discharge Coefficient 0.600 Invert Level (m) 0.850

Hydro-Brake® Optimum Manhole: SW58: Orifice Chamber, DS/PN: 10.010, Volume (m³): 12.6

Unit Reference	MD-SHE-0098-5000-1500-5000	Sump Available	Yes
Design Head (m)	1.500	Diameter (mm)	98
Design Flow (l/s)	5.0	Invert Level (m)	0.468
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	150
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.500	5.0	Kick-Flo®	0.878	3.9
Flush-Flo™	0.431	4.9	Mean Flow over Head Range	-	4.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type

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Hydro-Brake® Optimum Manhole: SW58: Orifice Chamber, DS/PN: 10.010, Volume (m³): 12.6

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)	Depth (m)	Flow (l/s)
0.100	3.2	0.600	4.8	1.600	5.1	2.600	6.5	5.000	8.8	7.500	10.7
0.200	4.4	0.800	4.3	1.800	5.4	3.000	6.9	5.500	9.2	8.000	11.0
0.300	4.8	1.000	4.1	2.000	5.7	3.500	7.4	6.000	9.6	8.500	11.3
0.400	4.9	1.200	4.5	2.200	6.0	4.000	7.9	6.500	10.0	9.000	11.6
0.500	4.9	1.400	4.8	2.400	6.2	4.500	8.4	7.000	10.3	9.500	11.9

Orifice Manhole: SW62: Dummy HW3, DS/PN: 10.014, Volume (m³): 0.9

Diameter (m) 0.001 Discharge Coefficient 0.600 Invert Level (m) 0.434

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<u>Offline Controls for Storm</u>		
 <u>Pipe Manhole: SW62: Dummy HW3, DS/PN: 10.014, Loop to PN: 9.000</u>		
 Diameter (m) 40 Length (m) 2.500 Coefficient of Contraction 0.600 Section Type Pipe/Conduit Roughness k (mm) 0.600 Upstream Invert Level (m) 0.284 Slope (1:X) 1500.0 Entry Loss Coefficient 0.500		

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Storage Structures for Storm

Cellular Storage Manhole: SW6: TANK 2 (dummy), DS/PN: 1.005

Invert Level (m) 1.147 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	650.0	0.0	0.700	650.0	0.0	0.701	0.0	0.0

Cellular Storage Manhole: SW21: TANK 1 (dummy), DS/PN: 1.012

Invert Level (m) 0.521 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	1040.0	0.0	0.700	1040.0	0.0	0.701	0.0	0.0

Cellular Storage Manhole: SW29: TANK 3 (dummy), DS/PN: 6.003

Invert Level (m) 0.592 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	900.0	0.0	1.000	900.0	0.0	1.001	0.0	0.0

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Cellular Storage Manhole: SW46: TANK 4 (dummy), DS/PN: 10.003

Invert Level (m) 0.998 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	420.0	0.0	0.800	420.0	0.0	0.801	0.0	0.0

Cellular Storage Manhole: SW55: TANK 5 (dummy), DS/PN: 10.008

Invert Level (m) 0.526 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	1000.0	0.0	1.000	1000.0	0.0	1.001	0.0	0.0

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

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.500
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 10 Number of Storage Structures 5 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 150.0 DVD Status ON
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status ON
 DTS Status ON

Profile(s) Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

Water Surcharged Flooded

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m ³)	Flow / Overflow Cap. (l/s)
1.000		SW1 15 Winter	1	+0%	100/15 Winter				1.559	-0.316	0.000	0.06
1.001		SW2 15 Winter	1	+0%	30/15 Winter				1.486	-0.273	0.000	0.11
1.002		SW3 15 Winter	1	+0%	30/15 Winter				1.450	-0.181	0.000	0.40
1.003		SW4 (CP) 15 Winter	1	+0%	30/15 Winter				1.406	-0.160	0.000	0.52
1.004	SW5: Tank 2 inlet (dummy)	15 Winter	1	+0%	30/15 Winter				1.399	-0.161	0.000	0.62

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

PN	US/MH Name	Pipe Flow (l/s)	Level	
			Status	Exceeded
1.000		SW1 6.8	OK	
1.001		SW2 10.4	OK	
1.002		SW3 35.5	OK	
1.003		SW4 (CP) 44.8	OK	
1.004	SW5: Tank 2 inlet (dummy)	45.0	OK	

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

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)	Flooded Volume (m³)	Flow / Cap.
1.005	SW6: TANK 2 (dummy)	240 Winter	1	+0%	100/60 Winter				1.220	-0.302	0.000	0.08
1.006	SW7: Tank 2 outlet (dummy)	15 Winter	1	+0%	30/15 Winter				1.239	-0.245	0.000	0.02
2.000	SW8: CH	15 Winter	1	+0%					1.756	-0.044	0.000	0.82
2.001	SW9: CH	15 Winter	1	+0%					1.517	-0.115	0.000	0.48
2.002	SW10	15 Winter	1	+0%					1.458	-0.106	0.000	0.54
2.003	SW11 (CP)	15 Winter	1	+0%	30/15 Winter				1.398	-0.158	0.000	0.45
1.007	SW12 (CP)	15 Winter	1	+0%	30/15 Winter				1.249	-0.102	0.000	0.27
1.008	SW13: oversized dual pipework	30 Winter	1	+0%	100/15 Winter				0.948	-0.361	0.000	0.04
3.000	SW14: oversized dual pipework	15 Winter	1	+0%	100/600 Winter				1.024	-0.576	0.000	0.01
1.009	SW15: Orifice Chamber	30 Winter	1	+0%	100/15 Winter				0.933	-0.303	0.000	0.06
4.000	SW16: CH	15 Winter	1	+0%					1.822	-0.078	0.000	0.44
5.000	SW17: CH	15 Winter	1	+0%					1.689	-0.111	0.000	0.15
4.001	SW18	15 Winter	1	+0%	30/15 Winter				1.557	-0.099	0.000	0.60
1.010	SW19 (CP)	15 Winter	1	+0%	100/15 Winter				0.760	-0.391	0.000	0.34
1.011	SW20: Tank 1 inlet (dummy)	15 Winter	1	+0%	100/180 Winter				0.735	-0.401	0.000	0.35
1.012	SW21: TANK 1 (dummy)	960 Winter	1	+0%	100/180 Winter				0.705	-0.416	0.000	0.03
1.013	SW22: Tank 1 outlet (dummy)	720 Winter	1	+0%	100/180 Winter				0.724	-0.380	0.000	0.02
1.014	SW23 (CP): Hydrobrake Chamber	720 Winter	1	+0%	100/180 Winter				0.726	-0.370	0.000	0.01
1.015	SW24: PI inlet (dummy)	960 Winter	1	+0%					0.455	-0.635	0.000	0.01
1.016	SW25: PI outlet (dummy)	960 Winter	1	+0%					0.450	-0.537	0.000	0.02
6.000	SW26	15 Winter	1	+0%	30/15 Winter				1.007	-0.268	0.000	0.29
6.001	SW27	15 Winter	1	+0%	30/15 Winter				0.985	-0.242	0.000	0.49
6.002	SW28: Tankk 3 inlet-a (dummy)	15 Winter	1	+0%	30/15 Winter				0.977	-0.243	0.000	0.66
6.003	SW29: TANK 3 (dummy)	480 Winter	1	+0%	100/120 Winter				0.737	-0.455	0.000	0.03
7.000	SW27a	600 Winter	1	+0%					1.800	-0.150	0.000	0.00
7.001	SW31 Tank 3 inlet-b (dummy)	600 Winter	1	+0%					1.748	-0.150	0.000	0.00
6.004	SW30: Tank 3 outlet (dummy)	480 Winter	1	+0%	100/120 Winter				0.735	-0.429	0.000	0.02
6.005	SW31	480 Winter	1	+0%	100/120 Winter				0.734	-0.422	0.000	0.02

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240 Blackfriars Road London SE1 8NW	Oldlands Farm - Phase 2 SW Drainage Design	
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Micro Drainage	Network 2018.1.1	

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

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.005	SW6: TANK 2 (dummy)		6.2	OK	
1.006	SW7: Tank 2 outlet (dummy)		2.3	OK	
2.000	SW8: CH		11.8	OK*	
2.001	SW9: CH		16.4	OK*	
2.002	SW10		16.3	OK*	
2.003	SW11 (CP)		24.2	OK	
1.007	SW12 (CP)		20.8	OK	
1.008	SW13: oversized dual pipework		23.1	OK	
3.000	SW14: oversized dual pipework		4.6	OK	
1.009	SW15: Orifice Chamber		19.3	OK	
4.000	SW16: CH		6.4	OK*	
5.000	SW17: CH		1.9	OK*	
4.001	SW18		17.8	OK*	
1.010	SW19 (CP)		70.9	OK	
1.011	SW20: Tank 1 inlet (dummy)		71.2	OK	
1.012	SW21: TANK 1 (dummy)		5.8	OK	
1.013	SW22: Tank 1 outlet (dummy)		4.9	OK	
1.014	SW23 (CP): Hydrobrake Chamber		4.2	OK	
1.015	SW24: PI inlet (dummy)		4.2	OK	
1.016	SW25: PI outlet (dummy)		4.2	OK	
6.000	SW26		67.5	OK	
6.001	SW27		109.4	OK	
6.002	SW28: Tankk 3 inlet-a (dummy)		108.2	OK	
6.003	SW29: TANK 3 (dummy)		5.4	OK	
7.000	SW27a		0.0	OK	
7.001	SW31 Tank 3 inlet-b (dummy)		0.0	OK	
6.004	SW30: Tank 3 outlet (dummy)		5.3	OK	

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240 Blackfriars Road		Oldlands Farm - Phase 2	
London		SW Drainage Design	
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Micro Drainage		Network 2018.1.1	
<u>1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>			

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240 Blackfriars Road London SE1 8NW	Oldlands Farm - Phase 2 SW Drainage Design	
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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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)	Flooded Volume (m ³)	Flow / Cap.
6.006		SW32	480 Winter	1	+0%	30/60 Winter			0.635	-0.374	0.000	0.03
8.000		SW33	15 Winter	1	+0%				1.329	-0.396	0.000	0.03
6.007	SW34: Orifice Chamber	480 Winter	1	+0%	30/30 Winter				0.632	-0.311	0.000	0.03
6.008	SW35: PI inlet (dummy)	60 Winter	1	+0%	100/15 Winter				0.548	-0.391	0.000	0.03
6.009	SW36: PI outlet (dummy)	60 Winter	1	+0%	30/30 Winter				0.547	-0.389	0.000	0.03
6.010		SW37	60 Winter	1	+0%	30/30 Winter			0.547	-0.384	0.000	0.02
9.000		SW40	60 Winter	1	+0%				0.547	-0.265	0.000	0.04
9.001		SW41	60 Winter	1	+0%				0.547	-0.263	0.000	0.04
6.011	SW40: Hydrobrake HW2 (dummy)	60 Winter	1	+0%	30/15 Winter				0.547	-0.233	0.000	0.05
10.000		SW41	15 Winter	1	+0%	30/15 Winter			1.359	-0.216	0.000	0.28
10.001		SW42	15 Winter	1	+0%	30/15 Winter			1.317	-0.189	0.000	0.49
10.002	SW43: Tank 4 inlet-a (dummy)	15 Winter	1	+0%	100/15 Winter				1.245	-0.239	0.000	0.29
11.000		SW44	15 Winter	1	+0%	30/15 Winter			1.411	-0.009	0.000	1.00
11.001	SW45: Tank 4 inlet-b (dummy)	15 Winter	1	+0%	100/120 Winter				1.126	-0.276	0.000	0.16
10.003	SW46: TANK 4 (dummy)	240 Winter	1	+0%	100/120 Winter				1.090	-0.282	0.000	0.07
10.004	SW47: Tank 4 outlet (dummy)	240 Winter	1	+0%	100/60 Winter				1.083	-0.270	0.000	0.06
10.005	SW48: Orifice Chamber	240 Winter	1	+0%	100/60 Winter				1.081	-0.259	0.000	0.03
12.000		SW49	15 Winter	1	+0%				2.015	-0.385	0.000	0.06
12.001		SW50	15 Winter	1	+0%				1.587	-0.363	0.000	0.10
13.000		SW51	15 Winter	1	+0%	100/15 Winter			1.113	-0.387	0.000	0.05
12.002	SW52: Orfifce Chamber	15 Winter	1	+0%	100/15 Winter				1.058	-0.317	0.000	0.18
10.006		SW53	15 Winter	1	+0%	100/15 Winter			0.844	-0.264	0.000	0.49
10.007	SW54: Tank 5 inlet (dummy)	15 Winter	1	+0%	100/15 Winter				0.832	-0.270	0.000	0.48
10.008	SW55: TANK 5 (dummy)	960 Winter	1	+0%	30/480 Winter				0.754	-0.297	0.000	0.03
10.009	SW56: Tank 5 outlet (dummy)	15 Winter	1	+0%	30/15 Winter				0.757	-0.243	0.000	0.01
14.000		SW57	15 Winter	1	+0%	100/15 Winter			1.211	-0.289	0.000	0.28
10.010	SW58: Orifice Chamber	15 Winter	1	+0%	30/15 Winter				0.808	-0.110	0.000	0.04
10.011	SW59: PI inlet (dummy)	60 Winter	1	+0%	30/15 Winter				0.549	-0.208	0.000	0.08

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

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
6.006		SW32	5.8	OK	
8.000		SW33	7.7	OK	
6.007	SW34: Orifice Chamber		6.0	OK	
6.008	SW35: PI inlet (dummy)		6.4	OK	
6.009	SW36: PI outlet (dummy)		6.6	OK	
6.010		SW37	6.7	OK	
9.000		SW40	13.5	OK*	
9.001		SW41	13.0	OK*	
6.011	SW40: Hydrobrake HW2 (dummy)		11.7	OK	
10.000		SW41	27.5	OK	
10.001		SW42	37.4	OK	
10.002	SW43: Tank 4 inlet-a (dummy)		37.5	OK	
11.000		SW44	10.8	OK	
11.001	SW45: Tank 4 inlet-b (dummy)		10.8	OK	
10.003	SW46: TANK 4 (dummy)		4.7	OK	
10.004	SW47: Tank 4 outlet (dummy)		4.7	OK	
10.005	SW48: Orifice Chamber		4.7	OK	
12.000		SW49	15.2	OK	
12.001		SW50	26.5	OK	
13.000		SW51	13.2	OK	
12.002	SW52: Orifice Chamber		32.6	OK	
10.006		SW53	83.1	OK	
10.007	SW54: Tank 5 inlet (dummy)		83.8	OK	
10.008	SW55: TANK 5 (dummy)		6.1	OK	
10.009	SW56: Tank 5 outlet (dummy)		2.4	OK	
14.000		SW57	39.1	OK	
10.010	SW58: Orifice Chamber		4.7	OK	

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<u>1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>					
PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.011	SW59: PI inlet (dummy)		4.5	OK	
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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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)	Flooded Volume (m³)	Flow / Cap.
10.012	SW60: PI outlet (dummy)	60 Winter	1	+0%	30/15 Winter				0.548	-0.203	0.000	0.08
10.013	SW61	60 Winter	1	+0%	30/15 Winter				0.548	-0.196	0.000	0.09
10.014	SW62: Dummy HW3	60 Winter	1	+0%	30/15 Winter		1/15 Winter	36	0.547	-0.187	0.000	0.00
15.000	SW63: Overflow Flood Storage	600 Winter	1	+0%					1.200	-0.225	0.000	0.00

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.012	SW60: PI outlet (dummy)		4.4	OK	
10.013	SW61		4.4	OK	
10.014	SW62: Dummy HW3	5.9	0.0	OK	
15.000	SW63: Overflow Flood Storage		0.0	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.500
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 10 Number of Storage Structures 5 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 150.0 DVD Status ON
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status ON
 DTS Status ON

Profile(s) Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

Water Surcharged Flooded

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m ³)	Flow / Overflow Cap. (l/s)
1.000		SW1 15 Winter	30	+0%	100/15 Winter				1.802	-0.073	0.000	0.11
1.001		SW2 15 Winter	30	+0%	30/15 Winter				1.783	0.024	0.000	0.23
1.002		SW3 15 Winter	30	+0%	30/15 Winter				1.764	0.133	0.000	0.98
1.003	SW4 (CP)	15 Winter	30	+0%	30/15 Winter				1.688	0.122	0.000	1.36
1.004	SW5: Tank 2 inlet (dummy)	15 Winter	30	+0%	30/15 Winter				1.594	0.034	0.000	1.58

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
1.000		SW1 13.2		OK
1.001		SW2 21.3	SURCHARGED	
1.002		SW3 86.6	SURCHARGED	
1.003	SW4 (CP)	116.5	SURCHARGED	
1.004	SW5: Tank 2 inlet (dummy)	115.0	SURCHARGED	

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240 Blackfriars Road London SE1 8NW	Oldlands Farm - Phase 2 SW Drainage Design	
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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)	Flooded Volume (m ³)	Flow / Cap.
1.005	SW6: TANK 2 (dummy)	120 Winter	30	+0%	100/60 Winter				1.351	-0.171	0.000	0.22
1.006	SW7: Tank 2 outlet (dummy)	15 Winter	30	+0%	30/15 Winter				1.516	0.033	0.000	0.12
2.000	SW8: CH	30 Winter	30	+0%					1.800	0.000	0.000	1.39
2.001	SW9: CH	30 Winter	30	+0%					1.632	0.000	0.000	0.83
2.002	SW10	30 Winter	30	+0%					1.565	0.000	0.000	0.90
2.003	SW11 (CP)	15 Winter	30	+0%	30/15 Winter				1.605	0.048	0.000	0.98
1.007	SW12 (CP)	15 Winter	30	+0%	30/15 Winter				1.531	0.180	0.000	0.34
1.008	SW13: oversized dual pipework	30 Winter	30	+0%	100/15 Winter				1.211	-0.098	0.000	0.07
3.000	SW14: oversized dual pipework	30 Winter	30	+0%	100/600 Winter				1.156	-0.444	0.000	0.02
1.009	SW15: Orifice Chamber	30 Winter	30	+0%	100/15 Winter				1.156	-0.081	0.000	0.08
4.000	SW16: CH	15 Winter	30	+0%					1.900	0.000	0.000	1.00
5.000	SW17: CH	15 Winter	30	+0%					1.755	-0.045	0.000	0.36
4.001	SW18	15 Winter	30	+0%	30/15 Winter				1.746	0.090	0.000	1.54
1.010	SW19 (CP)	1440 Winter	30	+0%	100/15 Winter				1.007	-0.144	0.000	0.11
1.011	SW20: Tank 1 inlet (dummy)	1440 Winter	30	+0%	100/180 Winter				1.007	-0.129	0.000	0.11
1.012	SW21: TANK 1 (dummy)	1440 Winter	30	+0%	100/180 Winter				1.007	-0.114	0.000	0.03
1.013	SW22: Tank 1 outlet (dummy)	1440 Winter	30	+0%	100/180 Winter				1.013	-0.091	0.000	0.02
1.014	SW23 (CP): Hydrobrake Chamber	1440 Winter	30	+0%	100/180 Winter				1.015	-0.081	0.000	0.02
1.015	SW24: PI inlet (dummy)	1440 Winter	30	+0%					0.455	-0.634	0.000	0.01
1.016	SW25: PI outlet (dummy)	960 Winter	30	+0%					0.450	-0.537	0.000	0.02
6.000	SW26	15 Winter	30	+0%	30/15 Winter				1.307	0.032	0.000	0.76
6.001	SW27	15 Winter	30	+0%	30/15 Winter				1.270	0.043	0.000	1.44
6.002	SW28: Tankk 3 inlet-a (dummy)	15 Winter	30	+0%	30/15 Winter				1.227	0.007	0.000	1.93
6.003	SW29: TANK 3 (dummy)	600 Winter	30	+0%	100/120 Winter				0.998	-0.194	0.000	0.03
7.000	SW27a	600 Winter	30	+0%					1.800	-0.150	0.000	0.00
7.001	SW31 Tank 3 inlet-b (dummy)	600 Winter	30	+0%					1.748	-0.150	0.000	0.00
6.004	SW30: Tank 3 outlet (dummy)	600 Winter	30	+0%	100/120 Winter				1.004	-0.160	0.000	0.02
6.005	SW31	600 Winter	30	+0%	100/120 Winter				1.004	-0.152	0.000	0.02

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240 Blackfriars Road London SE1 8NW	Oldlands Farm - Phase 2 SW Drainage Design	
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.005	SW6: TANK 2 (dummy)		16.2	OK	
1.006	SW7: Tank 2 outlet (dummy)		17.1	SURCHARGED	
2.000	SW8: CH		20.1	SURCHARGED*	
2.001	SW9: CH		28.7	SURCHARGED*	
2.002	SW10		27.0	SURCHARGED*	
2.003	SW11 (CP)		52.8	SURCHARGED	
1.007	SW12 (CP)		25.8	SURCHARGED	
1.008	SW13: oversized dual pipework		33.7	OK	
3.000	SW14: oversized dual pipework		7.9	OK	
1.009	SW15: Orifice Chamber		27.1	OK	
4.000	SW16: CH		14.4	SURCHARGED*	
5.000	SW17: CH		4.5	OK*	
4.001	SW18		46.0	SURCHARGED*	
1.010	SW19 (CP)		22.3	OK	
1.011	SW20: Tank 1 inlet (dummy)		22.2	OK	
1.012	SW21: TANK 1 (dummy)		6.0	OK	
1.013	SW22: Tank 1 outlet (dummy)		5.1	OK	
1.014	SW23 (CP): Hydrobrake Chamber		4.4	OK	
1.015	SW24: PI inlet (dummy)		4.4	OK	
1.016	SW25: PI outlet (dummy)		4.4	OK	
6.000	SW26		177.7	SURCHARGED	
6.001	SW27		320.9	SURCHARGED	
6.002	SW28: Tankk 3 inlet-a (dummy)		318.0	SURCHARGED	
6.003	SW29: TANK 3 (dummy)		5.4	OK	
7.000	SW27a		0.0	OK	
7.001	SW31 Tank 3 inlet-b (dummy)		0.0	OK	
6.004	SW30: Tank 3 outlet (dummy)		5.3	OK	

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240 Blackfriars Road London SE1 8NW		Oldlands Farm - Phase 2 SW Drainage Design			
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Micro Drainage		Network 2018.1.1			
<u>30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>					
PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
6.005		SW31	5.3	OK	
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240 Blackfriars Road London SE1 8NW	Oldlands Farm - Phase 2 SW Drainage Design	
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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)	Flooded Volume (m³)	Flow / Cap.
6.006		SW32	120	Winter	30	+0%	30/60	Winter	1.073	0.064	0.000	0.04
8.000		SW33	15	Winter	30	+0%			1.362	-0.363	0.000	0.08
6.007	SW34: Orifice Chamber	120	Winter	30	+0%	30/30	Winter		1.070	0.127	0.000	0.03
6.008	SW35: PI inlet (dummy)	30	Winter	30	+0%	100/15	Winter		0.938	-0.001	0.000	0.02
6.009	SW36: PI outlet (dummy)	30	Winter	30	+0%	30/30	Winter		0.938	0.002	0.000	0.03
6.010		SW37	30	Winter	30	+0%	30/30	Winter	0.938	0.007	0.000	0.02
9.000		SW40	120	Winter	30	+0%			0.812	0.000	0.000	0.05
9.001		SW41	180	Winter	30	+0%			0.810	0.000	0.000	0.04
6.011	SW40: Hydrobrake HW2 (dummy)	30	Winter	30	+0%	30/15	Winter		0.939	0.159	0.000	0.05
10.000		SW41	15	Winter	30	+0%	30/15	Winter	1.608	0.033	0.000	0.66
10.001		SW42	15	Winter	30	+0%	30/15	Winter	1.522	0.016	0.000	1.24
10.002	SW43: Tank 4 inlet-a (dummy)	15	Winter	30	+0%	100/15	Winter		1.353	-0.131	0.000	0.74
11.000		SW44	15	Winter	30	+0%	30/15	Winter	1.594	0.174	0.000	2.53
11.001	SW45: Tank 4 inlet-b (dummy)	180	Winter	30	+0%	100/120	Winter		1.208	-0.194	0.000	0.10
10.003	SW46: TANK 4 (dummy)	180	Winter	30	+0%	100/120	Winter		1.207	-0.165	0.000	0.15
10.004	SW47: Tank 4 outlet (dummy)	180	Winter	30	+0%	100/60	Winter		1.227	-0.126	0.000	0.12
10.005	SW48: Orifice Chamber	180	Winter	30	+0%	100/60	Winter		1.227	-0.113	0.000	0.05
12.000		SW49	15	Winter	30	+0%			2.056	-0.344	0.000	0.14
12.001		SW50	15	Winter	30	+0%			1.656	-0.294	0.000	0.26
13.000		SW51	15	Winter	30	+0%	100/15	Winter	1.379	-0.121	0.000	0.10
12.002	SW52: Orfifce Chamber	15	Winter	30	+0%	100/15	Winter		1.369	-0.006	0.000	0.37
10.006		SW53	960	Winter	30	+0%	100/15	Winter	1.096	-0.012	0.000	0.15
10.007	SW54: Tank 5 inlet (dummy)	960	Winter	30	+0%	100/15	Winter		1.094	-0.008	0.000	0.15
10.008	SW55: TANK 5 (dummy)	960	Winter	30	+0%	30/480	Winter		1.082	0.031	0.000	0.07
10.009	SW56: Tank 5 outlet (dummy)	960	Winter	30	+0%	30/15	Winter		1.085	0.085	0.000	0.06
14.000		SW57	15	Winter	30	+0%	100/15	Winter	1.324	-0.176	0.000	0.66
10.010	SW58: Orifice Chamber	15	Winter	30	+0%	30/15	Winter		1.101	0.183	0.000	0.04
10.011	SW59: PI inlet (dummy)	30	Winter	30	+0%	30/15	Winter		0.939	0.182	0.000	0.08

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

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
6.006		SW32	7.8	SURCHARGED	
8.000		SW33	18.7	OK	
6.007	SW34: Orifice Chamber		8.1	SURCHARGED	
6.008	SW35: PI inlet (dummy)		5.0	OK	
6.009	SW36: PI outlet (dummy)		6.0	SURCHARGED	
6.010		SW37	7.0	SURCHARGED	
9.000		SW40	15.8	SURCHARGED*	
9.001		SW41	12.8	SURCHARGED*	
6.011	SW40: Hydrobrake HW2 (dummy)		11.8	SURCHARGED	
10.000		SW41	63.9	SURCHARGED	
10.001		SW42	94.6	SURCHARGED	
10.002	SW43: Tank 4 inlet-a (dummy)		96.5	OK	
11.000		SW44	27.4	SURCHARGED	
11.001	SW45: Tank 4 inlet-b (dummy)		6.7	OK	
10.003	SW46: TANK 4 (dummy)		9.8	OK	
10.004	SW47: Tank 4 outlet (dummy)		9.4	OK	
10.005	SW48: Orifice Chamber		9.1	OK	
12.000		SW49	37.3	OK	
12.001		SW50	69.9	OK	
13.000		SW51	27.9	OK	
12.002	SW52: Orifice Chamber		67.6	OK	
10.006		SW53	25.9	OK	
10.007	SW54: Tank 5 inlet (dummy)		25.8	OK	
10.008	SW55: TANK 5 (dummy)		11.8	SURCHARGED	
10.009	SW56: Tank 5 outlet (dummy)		9.7	SURCHARGED	
14.000		SW57	92.4	OK	
10.010	SW58: Orifice Chamber		4.8	SURCHARGED	

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<u>30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>					
PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.011	SW59: PI inlet (dummy)		4.6	SURCHARGED	
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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)	Flooded Volume (m ³)	Flow / Cap.
10.012	SW60: PI outlet (dummy)	30 Winter	30	+0%	30/15 Winter				0.940	0.189	0.000	0.08
10.013	SW61	30 Winter	30	+0%	30/15 Winter				0.940	0.196	0.000	0.09
10.014	SW62: Dummy HW3	30 Winter	30	+0%	30/15 Winter		1/15 Winter	36	0.941	0.207	0.000	0.00
15.000	SW63: Overflow Flood Storage	600 Winter	30	+0%					1.200	-0.225	0.000	0.00

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.012	SW60: PI outlet (dummy)		4.5	SURCHARGED	
10.013	SW61		4.5	SURCHARGED	
10.014	SW62: Dummy HW3	6.6	0.0	SURCHARGED	
15.000	SW63: Overflow Flood Storage		0.0	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.500
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 10 Number of Storage Structures 5 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 150.0 DVD Status ON
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status ON
 DTS Status ON

Profile(s) Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

Water Surcharged Flooded

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m ³)	Flow / Overflow Cap. (l/s)
1.000		SW1 15 Winter	100	+40%	100/15 Winter				2.490	0.615	0.000	0.22
1.001		SW2 15 Winter	100	+40%	30/15 Winter				2.473	0.714	0.000	0.46
1.002		SW3 15 Winter	100	+40%	30/15 Winter				2.393	0.762	0.000	1.88
1.003	SW4 (CP)	15 Winter	100	+40%	30/15 Winter				2.153	0.587	0.000	2.58
1.004	SW5: Tank 2 inlet (dummy)	15 Winter	100	+40%	30/15 Winter				1.827	0.267	0.000	2.99

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
1.000		SW1 25.2	FLOOD RISK	
1.001		SW2 43.8	FLOOD RISK	
1.002		SW3 166.7	FLOOD RISK	
1.003	SW4 (CP)	220.7	SURCHARGED	
1.004	SW5: Tank 2 inlet (dummy)	218.2	SURCHARGED	

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

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)	Flooded Volume (m ³)	Flow / Cap.
1.005	SW6: TANK 2 (dummy)	1440 Winter	100	+40%	100/60 Winter				1.743	0.221	0.000	0.13
1.006	SW7: Tank 2 outlet (dummy)	1440 Winter	100	+40%	30/15 Winter				1.744	0.261	0.000	0.07
2.000	SW8: CH	60 Winter	100	+40%					1.800	0.000	0.000	1.79
2.001	SW9: CH	1440 Winter	100	+40%					1.632	0.000	0.000	0.12
2.002	SW10	600 Winter	100	+40%					1.565	0.000	0.000	0.26
2.003	SW11 (CP)	1440 Winter	100	+40%	30/15 Winter				1.745	0.188	0.000	0.12
1.007	SW12 (CP)	1440 Winter	100	+40%	30/15 Winter				1.744	0.393	0.000	0.19
1.008	SW13: oversized dual pipework	1440 Winter	100	+40%	100/15 Winter				1.733	0.423	0.000	0.03
3.000	SW14: oversized dual pipework	1440 Winter	100	+40%	100/600 Winter				1.732	0.132	0.000	0.00
1.009	SW15: Orifice Chamber	1440 Winter	100	+40%	100/15 Winter				1.733	0.496	0.000	0.04
4.000	SW16: CH	60 Winter	100	+40%					1.900	0.000	0.000	1.03
5.000	SW17: CH	30 Winter	100	+40%					1.800	0.000	0.000	0.50
4.001	SW18	30 Winter	100	+40%	30/15 Winter				1.759	0.103	0.000	2.17
1.010	SW19 (CP)	1440 Winter	100	+40%	100/15 Winter				1.727	0.575	0.000	0.15
1.011	SW20: Tank 1 inlet (dummy)	1440 Winter	100	+40%	100/180 Winter				1.726	0.590	0.000	0.16
1.012	SW21: TANK 1 (dummy)	1440 Winter	100	+40%	100/180 Winter				1.726	0.606	0.000	0.07
1.013	SW22: Tank 1 outlet (dummy)	1440 Winter	100	+40%	100/180 Winter				1.726	0.622	0.000	0.03
1.014	SW23 (CP): Hydrobrake Chamber	1440 Winter	100	+40%	100/180 Winter				1.726	0.631	0.000	0.02
1.015	SW24: PI inlet (dummy)	1440 Winter	100	+40%					0.456	-0.634	0.000	0.01
1.016	SW25: PI outlet (dummy)	1440 Winter	100	+40%					0.450	-0.537	0.000	0.02
6.000	SW26	15 Winter	100	+40%	30/15 Winter				1.896	0.621	0.000	1.32
6.001	SW27	15 Winter	100	+40%	30/15 Winter				1.809	0.582	0.000	2.48
6.002	SW28: Tankk 3 inlet-a (dummy)	1440 Winter	100	+40%	30/15 Winter				1.512	0.292	0.000	0.17
6.003	SW29: TANK 3 (dummy)	1440 Winter	100	+40%	100/120 Winter				1.512	0.320	0.000	0.11
7.000	SW27a	600 Winter	100	+40%					1.800	-0.150	0.000	0.00
7.001	SW31 Tank 3 inlet-b (dummy)	600 Winter	100	+40%					1.748	-0.150	0.000	0.00
6.004	SW30: Tank 3 outlet (dummy)	1440 Winter	100	+40%	100/120 Winter				1.580	0.416	0.000	0.04
6.005	SW31	1440 Winter	100	+40%	100/120 Winter				1.586	0.430	0.000	0.02

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

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.005	SW6: TANK 2 (dummy)		9.4	SURCHARGED	
1.006	SW7: Tank 2 outlet (dummy)		9.4	SURCHARGED	
2.000	SW8: CH		25.8	SURCHARGED*	
2.001	SW9: CH		4.0	SURCHARGED*	
2.002	SW10		7.8	SURCHARGED*	
2.003	SW11 (CP)		6.3	SURCHARGED	
1.007	SW12 (CP)		14.5	SURCHARGED	
1.008	SW13: oversized dual pipework		16.1	SURCHARGED	
3.000	SW14: oversized dual pipework		0.9	SURCHARGED	
1.009	SW15: Orifice Chamber		15.4	SURCHARGED	
4.000	SW16: CH		14.9	SURCHARGED*	
5.000	SW17: CH		6.4	SURCHARGED*	
4.001	SW18		64.7	SURCHARGED*	
1.010	SW19 (CP)		32.1	SURCHARGED	
1.011	SW20: Tank 1 inlet (dummy)		31.9	SURCHARGED	
1.012	SW21: TANK 1 (dummy)		13.4	SURCHARGED	
1.013	SW22: Tank 1 outlet (dummy)		8.2	SURCHARGED	
1.014	SW23 (CP): Hydrobrake Chamber		4.4	SURCHARGED	
1.015	SW24: PI inlet (dummy)		4.4	OK	
1.016	SW25: PI outlet (dummy)		4.4	OK	
6.000	SW26		308.0	SURCHARGED	
6.001	SW27		552.0	SURCHARGED	
6.002	SW28: Tankk 3 inlet-a (dummy)		28.2	SURCHARGED	
6.003	SW29: TANK 3 (dummy)		18.3	SURCHARGED	
7.000	SW27a		0.0	OK	
7.001	SW31 Tank 3 inlet-b (dummy)		0.0	OK	
6.004	SW30: Tank 3 outlet (dummy)		9.5	SURCHARGED	

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

PN	US/MH Name	Overflow (l/s)	Pipe	Status	Level Exceeded
			Flow (l/s)		
6.005		SW31	5.4	SURCHARGED	

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

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
6.006		SW32	4.9	SURCHARGED	
8.000		SW33	17.5	OK	
6.007	SW34: Orifice Chamber		5.1	SURCHARGED	
6.008	SW35: PI inlet (dummy)		5.9	SURCHARGED	
6.009	SW36: PI outlet (dummy)		6.9	SURCHARGED	
6.010		SW37	8.0	SURCHARGED	
9.000		SW40	10.1	SURCHARGED*	
9.001		SW41	9.9	SURCHARGED*	
6.011	SW40: Hydrobrake HW2 (dummy)		11.8	SURCHARGED	
10.000		SW41	119.0	SURCHARGED	
10.001		SW42	172.8	SURCHARGED	
10.002	SW43: Tank 4 inlet-a (dummy)		9.0	SURCHARGED	
11.000		SW44	47.7	SURCHARGED	
11.001	SW45: Tank 4 inlet-b (dummy)		2.5	SURCHARGED	
10.003	SW46: TANK 4 (dummy)		6.9	SURCHARGED	
10.004	SW47: Tank 4 outlet (dummy)		6.9	SURCHARGED	
10.005	SW48: Orifice Chamber		6.9	SURCHARGED	
12.000		SW49	67.8	OK	
12.001		SW50	119.8	OK	
13.000		SW51	42.2	SURCHARGED	
12.002	SW52: Orifice Chamber		105.1	SURCHARGED	
10.006		SW53	33.3	SURCHARGED	
10.007	SW54: Tank 5 inlet (dummy)		33.6	SURCHARGED	
10.008	SW55: TANK 5 (dummy)		19.5	SURCHARGED	
10.009	SW56: Tank 5 outlet (dummy)		15.6	SURCHARGED	
14.000		SW57	8.6	SURCHARGED	
10.010	SW58: Orifice Chamber		4.7	SURCHARGED	

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

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.011	SW59: PI inlet (dummy)		4.7	SURCHARGED	

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

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)	Flooded Volume (m ³)	Flow / Cap.
10.012	SW60: PI outlet (dummy)	60 Winter	100	+40%	30/15 Winter				1.541	0.790	0.000	0.09
10.013	SW61	60 Winter	100	+40%	30/15 Winter				1.546	0.802	0.000	0.09
10.014	SW62: Dummy HW3	60 Winter	100	+40%	30/15 Winter		1/15 Winter	36	1.551	0.817	0.000	0.00
15.000	SW63: Overflow Flood Storage	600 Winter	100	+40%					1.200	-0.225	0.000	0.00

PN	US/MH Name	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
10.012	SW60: PI outlet (dummy)		4.7	SURCHARGED	
10.013	SW61		4.8	SURCHARGED	
10.014	SW62: Dummy HW3	6.7	0.0	FLOOD RISK	
15.000	SW63: Overflow Flood Storage		0.0	OK	