Norwich Western Link

Drainage Strategy Report Appendix 5 : MicroDrainage Calculations

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1 Introduction

1.1.1 This document details the results of the hydraulic analysis undertaken, using Microdrainage software, for the Proposed Scheme highway drainage catchments and is to be read in conjunction with the Drainage Strategy Report. Summary of results can be found on pages 3, 20, 37, 88, 102, 133, 168 and 184 which show that all pipes pass the relevant checks at 1 in 1, 1 in 5, 1 in 10, 1 in 30 and 1 in100 year events without flooding, or that flooding from 1 in 100 plus climate change storms will be contained within the scheme extents, and that freeboard is achieved for attenuation features.

1.1.2 We have included a summary of key information shown in this document in an accessible format. However, some users may not be able to access all technical details. If you require this document in a more accessible format please contact: norwichwesternlink@norfolk.gov.uk

Catchment A1067 Basin A1067-1 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:10 no flooding check
All pipes pass for 1:10
1:30 no flooding check All pipes pass

Flooding check
The assessment* identifies that flooding resulting from 100 +CC storms will be cointained within the scheme extents.

Attenuation
100 + CC Peak Water Level: 15.222m
Cover level: 16.040m
Freeboard: achieved
*Assessment using FloodFlow has been undertaken for the 100yr Critical storm identified from the Microdrainage modelling. This analysis undertakes a more detailed assessment of flooding which considers the proposed topograpgy.

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-A1067

Pipe Sizes Circular Manhole Sizes Adoptable

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 610500 313350 TG 10500 13350	PIMP (%)	100
C (1km)	-0.024	Add Flow / Climate Change (%)	20
D1 (1km)	0.305	Minimum Backdrop Height (m)	0.200
D2 (1km)	0.305	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.270	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.313	Min Vel for Auto Design only (m/s)	1.00
F (1km)	2.473	Min Slope for Optimisation (1:X)	200
Maximum Rainfall (mm/hr)	250		

Designed with Level Soffits

Time Area Diagram for SWS-A1067 at outfall A1067-** (pipe A1067-1.009)

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.583	4-8	0.245

Total Area Contributing (ha) = 0.828

Total Pipe Volume (m³) = 49.472

Time Area Diagram at outfall A1067-27 (pipe A1067-10.002)

Time (mins)	Area (ha)
0-4	0.000

Total Area Contributing (ha) = 0.000

Total Pipe Volume (m³) = 6.423

Network Design Table for SWS-A1067

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
A1067-1.000	15.548	0.215	72.3	0.011	5.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-2.000	12.808	0.376	34.1	0.005	5.00	0.0	0.600		o	225	Pipe/Conduit	
A1067-1.001	55.440	1.349	41.1	0.045	0.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-3.000	4.620	0.194	23.8	0.052	5.00	0.0	0.600		o	225	Pipe/Conduit	
A1067-1.002	51.613	1.504	34.3	0.056	0.00	0.0	1.500		o	300	Pipe/Conduit	
A1067-4.000	5.276	0.059	89.4	0.047	5.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-4.001	48.095	1.315	36.6	0.020	0.00	0.0	0.600		o	225	Pipe/Conduit	
A1067-4.002	12.331	0.181	68.1	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
A1067-1.000	64.96	5.19	21.284	0.011	0.0	0.0	0.4	1.35	53.7	2.4
A1067-2.000	65.82	5.09	21.446	0.005	0.0	0.0	0.2	2.25	89.4	1.0
A1067-1.001	60.83	5.71	21.070	0.061	0.0	0.0	2.0	1.79	71.3	12.1
A1067-3.000	66.42	5.03	19.915	0.052	0.0	0.0	1.9	2.69	107.1	11.2
A1067-1.002	58.28	6.07	19.646	0.169	0.0	0.0	5.3	2.37	167.6	32.0
A1067-4.000	66.02	5.07	19.772	0.047	0.0	0.0	1.7	1.21	48.3	10.0
A1067-4.001	62.88	5.44	19.713	0.067	0.0	0.0	2.3	2.17	86.3	13.6
A1067-4.002	61.86	5.57	18.398	0.067	0.0	0.0	2.3	1.59	63.1	13.6

Network Design Table for SWS-A1067

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
A1067-1.003	81.847	2.232	36.7	0.105	0.00	0.0	1.500		o	300	Pipe/Conduit	
A1067-1.004	9.250	0.116	80.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
A1067-1.005	44.392	0.555	80.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
A1067-5.000	50.032	0.625	80.0	0.015	5.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-5.001	50.044	1.311	38.2	0.017	0.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-5.002	32.332	0.903	35.8	0.016	0.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-6.000	34.694	0.591	58.7	0.025	5.00	0.0	1.500		o	225	Pipe/Conduit	
A1067-1.006	38.568	0.536	72.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
A1067-7.000	12.186	0.120	101.5	0.022	5.00	0.0	0.600		o	225	Pipe/Conduit	
A1067-8.000	54.351	1.051	51.7	0.038	5.00	0.0	0.600		o	225	Pipe/Conduit	
A1067-7.001	16.083	0.107	150.0	0.019	0.00	0.0	0.600		o	225	Pipe/Conduit	
A1067-1.007	6.974	0.088	79.2	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
A1067-1.008	11.332	0.300	37.8	0.048	0.00	0.0	0.600		o	375	Pipe/Conduit	
A1067-9.000	19.529	0.164	119.1	0.037	5.00	0.0		0.080	|_|	450	Ditch	
A1067-9.001	15.805	0.092	171.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
A1067-9.002	29.825	0.510	58.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
A1067-1.009	14.017	1.500	9.3	0.250	0.00	0.0	0.600		u	-1	Pipe/Conduit	
A1067-10.000	5.510	0.138	40.0	0.000	5.00	0.0		0.015	g	-2	Pipe/Conduit	
A1067-10.001	6.936	0.032	216.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
A1067-10.002	71.881	1.000	71.9	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
A1067-1.003	54.61	6.66	18.142	0.341	0.0	0.0	10.1	2.29	162.1	60.5
A1067-1.004	54.19	6.74	15.835	0.341	0.0	0.0	10.1	2.03	223.9	60.5
A1067-1.005	52.24	7.11	15.719	0.341	0.0	0.0	10.1	2.03	223.9	60.5
A1067-5.000	61.26	5.65	18.153	0.015	0.0	0.0	0.5	1.28	51.1	2.9
A1067-5.001	58.10	6.10	17.528	0.032	0.0	0.0	1.0	1.86	74.0	6.1
A1067-5.002	56.31	6.38	16.217	0.048	0.0	0.0	1.5	1.92	76.4	8.8
A1067-6.000	63.33	5.39	15.905	0.025	0.0	0.0	0.9	1.50	59.6	5.1
A1067-1.006	50.75	7.41	15.164	0.414	0.0	0.0	11.4	2.14	236.2	68.2
A1067-7.000	65.27	5.16	14.855	0.022	0.0	0.0	0.8	1.30	51.6	4.7
A1067-8.000	62.44	5.50	15.786	0.038	0.0	0.0	1.3	1.82	72.5	7.8
A1067-7.001	60.52	5.75	14.735	0.079	0.0	0.0	2.6	1.07	42.4	15.6
A1067-1.007	50.48	7.46	14.628	0.493	0.0	0.0	13.5	2.04	225.0	80.9
A1067-1.008	50.18	7.53	14.540	0.541	0.0	0.0	14.7	2.96	326.5	88.2
A1067-9.000	58.71	6.01	15.606	0.037	0.0	0.0	1.2	0.32	65.5	7.1
A1067-9.001	57.58	6.18	14.242	0.037	0.0	0.0	1.2	1.55	246.2	7.1
A1067-9.002	56.40	6.36	14.150	0.037	0.0	0.0	1.2	2.66	423.4	7.1
A1067-1.009	49.96	7.58	15.640	0.828	0.0	0.0	22.4	4.81	193.6	134.4
A1067-10.000	66.38	5.03	15.630	0.000	0.0	0.0	0.0	2.79	430.4	0.0
A1067-10.001	65.41	5.14	14.436	0.000	0.0	0.0	0.0	1.06	75.2	0.0
A1067-10.002	60.25	5.79	14.404	0.000	0.0	0.0	0.0	1.86	131.2	0.0

Conduit Sections for SWS-A1067

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-1	u	202	200			0.268	0.040
-2	g	1000	210			0.544	0.155

Manhole Schedules for SWS-A1067

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)
A1067-01	22.709	1.425	Open Manhole	1050	A1067-1.000	21.284	225				
A1067-02	22.871	1.425	Open Manhole	600	A1067-2.000	21.446	225				
A1067-03	22.550	1.481	Open Manhole	1050	A1067-1.001	21.070	225	A1067-1.000	21.069	225	
								A1067-2.000	21.070	225	
A1067-04	21.349	1.434	Open Manhole	600	A1067-3.000	19.915	225				
A1067-05	21.155	1.509	Open Manhole	1050	A1067-1.002	19.646	300	A1067-1.001	19.721	225	
								A1067-3.000	19.721	225	
A1067-06	21.206	1.434	Open Manhole	600	A1067-4.000	19.772	225				
A1067-07	21.147	1.434	Open Manhole	1500	A1067-4.001	19.713	225	A1067-4.000	19.713	225	
A1067-08	19.841	1.443	Open Manhole	1500	A1067-4.002	18.398	225	A1067-4.001	18.398	225	
A1067-09	19.660	1.518	Open Manhole	1050	A1067-1.003	18.142	300	A1067-1.002	18.142	300	
								A1067-4.002	18.217	225	
A1067-10	17.410	1.575	Open Manhole	1050	A1067-1.004	15.835	375	A1067-1.003	15.910	300	
A1067-11	17.397	1.678	Open Manhole	1500	A1067-1.005	15.719	375	A1067-1.004	15.719	375	
A1067-12	19.578	1.425	Open Manhole	1050	A1067-5.000	18.153	225				
A1067-13	19.320	1.792	Open Manhole	1050	A1067-5.001	17.528	225	A1067-5.000	17.528	225	
A1067-14	17.884	1.667	Open Manhole	1050	A1067-5.002	16.217	225	A1067-5.001	16.217	225	
A1067-15	17.330	1.425	Open Manhole	1050	A1067-6.000	15.905	225				
A1067-16	16.767	1.603	Open Manhole	1800	A1067-1.006	15.164	375	A1067-1.005	15.164	375	
								A1067-5.002	15.314	225	
								A1067-6.000	15.314	225	
A1067-17	16.314	1.459	Open Manhole	1500	A1067-7.000	14.855	225				
A1067-18	17.211	1.425	Open Manhole	1200	A1067-8.000	15.786	225				
A1067-19	16.485	1.750	Open Manhole	1200	A1067-7.001	14.735	225	A1067-7.000	14.735	225	
								A1067-8.000	14.735	225	
A1067-20	16.101	1.473	Open Manhole	1050	A1067-1.007	14.628	375	A1067-1.006	14.628	375	
								A1067-7.001	14.628	225	
A1067-FB	16.040	1.500	Open Manhole	1350	A1067-1.008	14.540	375	A1067-1.007	14.540	375	
A1067-21	16.056	0.450	Open Manhole	10	A1067-9.000	15.606	450				
A1067-22	15.892	1.650	Open Manhole	1200	A1067-9.001	14.242	450	A1067-9.000	15.442	450	1200
A1067-23	16.040	1.890	Junction		A1067-9.002	14.150	450	A1067-9.001	14.150	450	
A1067-IB	16.040	2.400	Junction		A1067-1.009	15.640	-1	A1067-1.008	14.240	375	
								A1067-9.002	13.640	450	
A1067-**	14.995	0.855	Open Manhole	1200		OUTFALL		A1067-1.009	14.140	-1	
A1067-24	15.840	0.210	Junction		A1067-10.000	15.630	-2				
A1067-25	16.394	1.958	Junction		A1067-10.001	14.436	300	A1067-10.000	15.492	-2	966
A1067-26	16.431	2.027	Open Manhole	1200	A1067-10.002	14.404	300	A1067-10.001	14.404	300	
A1067-27	14.104	0.700	Open Manhole	0		OUTFALL		A1067-10.002	13.404	300	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
A1067-01	18311.370	526546.939	18311.370	526546.939	Required	
A1067-02	18300.060	526526.293	18300.060	526526.293	Required	
A1067-03	18298.037	526538.940	18298.037	526538.940	Required	
A1067-04	18247.517	526554.803	18247.517	526554.803	Required	
A1067-05	18246.472	526559.302	18246.472	526559.302	Required	
A1067-06	18242.186	526547.987	18242.186	526547.987	Required	
A1067-07	18237.122	526549.464	18237.122	526549.464	Required	

Manhole Schedules for SWS-A1067

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
A1067-08	18194.301	526571.363	18194.301	526571.363	Required	
A1067-09	18200.209	526582.187	18200.209	526582.187	Required	
A1067-10	18129.224	526622.930	18129.224	526622.930	Required	
A1067-11	18133.049	526631.352	18133.049	526631.352	Required	
A1067-12	18057.222	526776.168	18057.222	526776.168	Required	
A1067-13	18083.561	526733.630	18083.561	526733.630	Required	
A1067-14	18087.796	526683.766	18087.796	526683.766	Required	
A1067-15	18119.856	526629.142	18119.856	526629.142	Required	
A1067-16	18093.744	526651.986	18093.744	526651.986	Required	
A1067-17	18052.136	526658.047	18052.136	526658.047	Required	
A1067-18	18102.981	526636.665	18102.981	526636.665	Required	
A1067-19	18058.765	526668.272	18058.765	526668.272	Required	
A1067-20	18068.457	526681.107	18068.457	526681.107	Required	
A1067-FB	18065.075	526687.206	18065.075	526687.206	Required	
A1067-21	17998.733	526720.364	17998.733	526720.364	Required	
A1067-22	18015.524	526710.393	18015.524	526710.393	Required	
A1067-23	18031.326	526710.725			No Entry	
A1067-IB	18056.129	526694.161			No Entry	
A1067-**	18042.121	526694.670			No Entry	
A1067-24	18059.188	526681.767			No Entry	
A1067-25	18060.191	526676.349			No Entry	
A1067-26	18061.589	526669.556	18061.589	526669.556	Required	
A1067-27	18122.710	526631.727			No Entry	

PIPELINE SCHEDULES for SWS-A1067

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)
A1067-1.000	o	225	A1067-01	22.709	21.284	1.200	Open Manhole	1050
A1067-2.000	o	225	A1067-02	22.871	21.446	1.200	Open Manhole	600
A1067-1.001	o	225	A1067-03	22.550	21.070	1.255	Open Manhole	1050
A1067-3.000	o	225	A1067-04	21.349	19.915	1.209	Open Manhole	600
A1067-1.002	o	300	A1067-05	21.155	19.646	1.209	Open Manhole	1050
A1067-4.000	o	225	A1067-06	21.206	19.772	1.209	Open Manhole	600
A1067-4.001	o	225	A1067-07	21.147	19.713	1.209	Open Manhole	1500
A1067-4.002	o	225	A1067-08	19.841	18.398	1.218	Open Manhole	1500
A1067-1.003	o	300	A1067-09	19.660	18.142	1.218	Open Manhole	1050
A1067-1.004	o	375	A1067-10	17.410	15.835	1.200	Open Manhole	1050
A1067-1.005	o	375	A1067-11	17.397	15.719	1.303	Open Manhole	1500
A1067-5.000	o	225	A1067-12	19.578	18.153	1.200	Open Manhole	1050
A1067-5.001	o	225	A1067-13	19.320	17.528	1.567	Open Manhole	1050
A1067-5.002	o	225	A1067-14	17.884	16.217	1.442	Open Manhole	1050
A1067-6.000	o	225	A1067-15	17.330	15.905	1.200	Open Manhole	1050
A1067-1.006	o	375	A1067-16	16.767	15.164	1.228	Open Manhole	1800
A1067-7.000	o	225	A1067-17	16.314	14.855	1.234	Open Manhole	1500
A1067-8.000	o	225	A1067-18	17.211	15.786	1.200	Open Manhole	1200
A1067-7.001	o	225	A1067-19	16.485	14.735	1.525	Open Manhole	1200
A1067-1.007	o	375	A1067-20	16.101	14.628	1.098	Open Manhole	1050
A1067-1.008	o	375	A1067-FB	16.040	14.540	1.125	Open Manhole	1350
A1067-9.000	|_|	450	A1067-21	16.056	15.606	0.000	Open Manhole	10

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)
A1067-1.000	15.548	72.3	A1067-03	22.550	21.069	1.256	Open Manhole	1050
A1067-2.000	12.808	34.1	A1067-03	22.550	21.070	1.255	Open Manhole	1050
A1067-1.001	55.440	41.1	A1067-05	21.155	19.721	1.209	Open Manhole	1050
A1067-3.000	4.620	23.8	A1067-05	21.155	19.721	1.209	Open Manhole	1050
A1067-1.002	51.613	34.3	A1067-09	19.660	18.142	1.218	Open Manhole	1050
A1067-4.000	5.276	89.4	A1067-07	21.147	19.713	1.209	Open Manhole	1500
A1067-4.001	48.095	36.6	A1067-08	19.841	18.398	1.218	Open Manhole	1500
A1067-4.002	12.331	68.1	A1067-09	19.660	18.217	1.218	Open Manhole	1050
A1067-1.003	81.847	36.7	A1067-10	17.410	15.910	1.200	Open Manhole	1050
A1067-1.004	9.250	80.0	A1067-11	17.397	15.719	1.303	Open Manhole	1500
A1067-1.005	44.392	80.0	A1067-16	16.767	15.164	1.228	Open Manhole	1800
A1067-5.000	50.032	80.0	A1067-13	19.320	17.528	1.567	Open Manhole	1050
A1067-5.001	50.044	38.2	A1067-14	17.884	16.217	1.442	Open Manhole	1050
A1067-5.002	32.332	35.8	A1067-16	16.767	15.314	1.228	Open Manhole	1800
A1067-6.000	34.694	58.7	A1067-16	16.767	15.314	1.228	Open Manhole	1800
A1067-1.006	38.568	72.0	A1067-20	16.101	14.628	1.098	Open Manhole	1050
A1067-7.000	12.186	101.5	A1067-19	16.485	14.735	1.525	Open Manhole	1200
A1067-8.000	54.351	51.7	A1067-19	16.485	14.735	1.525	Open Manhole	1200
A1067-7.001	16.083	150.0	A1067-20	16.101	14.628	1.248	Open Manhole	1050
A1067-1.007	6.974	79.2	A1067-FB	16.040	14.540	1.125	Open Manhole	1350
A1067-1.008	11.332	37.8	A1067-IB	16.040	14.240	1.425	Junction	
A1067-9.000	19.529	119.1	A1067-22	15.892	15.442	0.000	Open Manhole	1200

PIPELINE SCHEDULES for SWS-A1067

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)
A1067-9.001	o	450	A1067-22	15.892	14.242	1.200	Open Manhole	1200
A1067-9.002	o	450	A1067-23	16.040	14.150	1.440	Junction	
A1067-1.009	u	-1	A1067-IB	16.040	15.640	0.200	Junction	
A1067-10.000	g	-2	A1067-24	15.840	15.630	0.000	Junction	
A1067-10.001	o	300	A1067-25	16.394	14.436	1.658	Junction	
A1067-10.002	o	300	A1067-26	16.431	14.404	1.727	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)
A1067-9.001	15.805	171.8	A1067-23	16.040	14.150	1.440	Junction	
A1067-9.002	29.825	58.5	A1067-IB	16.040	13.640	1.950	Junction	
A1067-1.009	14.017	9.3	A1067-**	14.995	14.140	0.655	Open Manhole	1200
A1067-10.000	5.510	40.0	A1067-25	16.394	15.492	0.692	Junction	
A1067-10.001	6.936	216.7	A1067-26	16.431	14.404	1.727	Open Manhole	1200
A1067-10.002	71.881	71.9	A1067-27	14.104	13.404	0.400	Open Manhole	0

Free Flowing Outfall Details for SWS-A1067

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
A1067-1.009	A1067-**	14.995	14.140	0.000	1200	0

Free Flowing Outfall Details for SWS-A1067

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
A1067-10.002	A1067-27	14.104	13.404	0.000	0	0

Online Controls for SWS-A1067

Pump Manhole: A1067-IB, DS/PN: A1067-1.009, Volume (m³): 5.9

Invert Level (m) 15.640

Depth (m)	Flow (l/s)
5.000	0.0000

Storage Structures for SWS-A1067

Infiltration Basin Manhole: A1067-FB, DS/PN: A1067-1.008

Invert Level (m) 14.540 Infiltration Coefficient Side (m/hr) 0.00299 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	105.1	1.500	254.6

Infiltration Basin Manhole: A1067-IB, DS/PN: A1067-1.009

Invert Level (m) 14.040 Infiltration Coefficient Side (m/hr) 0.00299 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.00299 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	749.7	2.000	1427.3

Summary of Critical Results by Maximum Level (Rank 1) for SWS-A1067

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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
Climate Change (%)	20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A1067-1.000	A1067-01	15 minute 1 year Winter I+20%	22.709	21.313	-0.196	0.000	0.04	0.021	0.7	1.9	OK
A1067-2.000	A1067-02	15 minute 1 year Winter I+20%	22.871	21.457	-0.214	0.000	0.01	0.002	0.8	0.8	OK
A1067-1.001	A1067-03	15 minute 1 year Winter I+20%	22.550	21.124	-0.171	0.000	0.13	0.079	1.2	9.1	OK
A1067-3.000	A1067-04	15 minute 1 year Winter I+20%	21.349	19.971	-0.169	0.000	0.14	0.014	1.1	8.7	OK
A1067-1.002	A1067-05	15 minute 1 year Winter I+20%	21.155	19.727	-0.219	0.000	0.16	0.067	1.7	25.5	OK
A1067-4.000	A1067-06	15 minute 1 year Winter I+20%	21.206	19.845	-0.152	0.000	0.23	0.019	0.7	7.8	OK
A1067-4.001	A1067-07	15 minute 1 year Winter I+20%	21.147	19.767	-0.171	0.000	0.13	0.108	1.5	10.5	OK
A1067-4.002	A1067-08	15 minute 1 year Winter I+20%	19.841	18.466	-0.157	0.000	0.20	0.127	1.1	10.6	OK
A1067-1.003	A1067-09	15 minute 1 year Winter I+20%	19.660	18.259	-0.183	0.000	0.32	0.152	2.0	50.1	OK
A1067-1.004	A1067-10	15 minute 1 year Winter I+20%	17.410	15.995	-0.215	0.000	0.37	0.163	1.1	49.8	OK
A1067-1.005	A1067-11	15 minute 1 year Winter I+20%	17.397	15.845	-0.250	0.000	0.24	0.329	1.6	50.1	OK
A1067-5.000	A1067-12	15 minute 1 year Winter I+20%	19.578	18.185	-0.193	0.000	0.05	0.024	0.7	2.4	OK
A1067-5.001	A1067-13	15 minute 1 year Winter I+20%	19.320	17.566	-0.187	0.000	0.07	0.048	1.1	4.8	OK
A1067-5.002	A1067-14	15 minute 1 year Winter I+20%	17.884	16.263	-0.178	0.000	0.10	0.048	1.2	7.1	OK
A1067-6.000	A1067-15	15 minute 1 year Winter I+20%	17.330	15.945	-0.185	0.000	0.07	0.031	0.9	4.1	OK
A1067-1.006	A1067-16	15 minute 1 year Winter I+20%	16.767	15.299	-0.240	0.000	0.28	0.506	1.7	60.4	OK
A1067-7.000	A1067-17	15 minute 1 year Winter I+20%	16.314	14.899	-0.181	0.000	0.08	0.069	0.7	3.7	OK
A1067-8.000	A1067-18	15 minute 1 year Winter I+20%	17.211	15.832	-0.179	0.000	0.09	0.046	1.1	6.3	OK
A1067-7.001	A1067-19	15 minute 1 year Winter I+20%	16.485	14.861	-0.099	0.000	0.31	0.312	0.8	11.8	OK
A1067-1.007	A1067-20	15 minute 1 year Winter I+20%	16.101	14.841	-0.162	0.000	0.61	1.000	1.1	71.0	OK
A1067-1.008	A1067-FB	15 minute 1 year Winter I+20%	16.040	14.678	-0.237	0.000	0.29	15.630	1.7	62.8	OK
A1067-9.000	A1067-21	15 minute 1 year Winter I+20%	16.056	15.687	-0.369	0.000	0.10	0.000	0.2	6.2	OK
A1067-9.001	A1067-22	10080 minute 1 year Winter I+20%	15.892	14.486	-0.206	0.000	0.00	0.331	0.0	0.1	OK
A1067-9.002	A1067-23	10080 minute 1 year Winter I+20%	16.040	14.486	-0.114	0.000	0.00	1.934	0.0	0.1	OK*
A1067-1.009	A1067-IB	10080 minute 1 year Winter I+20%	16.040	14.486	-1.354	0.000	0.00	369.650	0.0	0.0	OK
A1067-10.000	A1067-24	15 minute 1 year Summer I+20%	15.840	15.630	-0.210	0.000	0.00	0.000	0.0	0.0	OK
A1067-10.001	A1067-25	15 minute 1 year Summer I+20%	16.394	14.436	-0.300	0.000	0.00	0.000	0.0	0.0	OK*
A1067-10.002	A1067-26	15 minute 1 year Summer I+20%	16.431	14.404	-0.300	0.000	0.00	0.000	0.0	0.0	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-A1067

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coeffiecient 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 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 610500 313350 TG 10500 13350 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Catchment Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A1067-1.000	A1067-01	15 minute 5 year Winter I+20%	22.709	21.321	-0.188	0.000	0.06	0.027	0.7	3.0	OK
A1067-2.000	A1067-02	15 minute 5 year Winter I+20%	22.871	21.463	-0.208	0.000	0.02	0.003	0.9	1.2	OK
A1067-1.001	A1067-03	15 minute 5 year Winter I+20%	22.550	21.140	-0.155	0.000	0.21	0.104	1.4	14.3	OK
A1067-3.000	A1067-04	15 minute 5 year Winter I+20%	21.349	19.987	-0.153	0.000	0.22	0.019	1.3	13.8	OK
A1067-1.002	A1067-05	15 minute 5 year Winter I+20%	21.155	19.749	-0.197	0.000	0.25	0.086	1.9	40.5	OK
A1067-4.000	A1067-06	15 minute 5 year Winter I+20%	21.206	19.866	-0.131	0.000	0.36	0.025	0.8	12.4	OK
A1067-4.001	A1067-07	15 minute 5 year Winter I+20%	21.147	19.782	-0.156	0.000	0.20	0.143	1.6	16.7	OK
A1067-4.002	A1067-08	15 minute 5 year Winter I+20%	19.841	18.485	-0.138	0.000	0.31	0.165	1.2	16.9	OK
A1067-1.003	A1067-09	15 minute 5 year Winter I+20%	19.660	18.295	-0.147	0.000	0.51	0.252	2.2	79.8	OK
A1067-1.004	A1067-10	15 minute 5 year Winter I+20%	17.410	16.045	-0.165	0.000	0.59	0.239	1.3	79.2	OK
A1067-1.005	A1067-11	15 minute 5 year Winter I+20%	17.397	15.882	-0.213	0.000	0.39	0.483	1.7	79.6	OK
A1067-5.000	A1067-12	15 minute 5 year Winter I+20%	19.578	18.195	-0.183	0.000	0.08	0.032	0.8	3.8	OK
A1067-5.001	A1067-13	15 minute 5 year Winter I+20%	19.320	17.577	-0.176	0.000	0.11	0.063	1.2	7.7	OK
A1067-5.002	A1067-14	15 minute 5 year Winter I+20%	17.884	16.275	-0.166	0.000	0.15	0.061	1.4	11.2	OK
A1067-6.000	A1067-15	15 minute 5 year Winter I+20%	17.330	15.956	-0.174	0.000	0.11	0.040	1.0	6.5	OK
A1067-1.006	A1067-16	15 minute 5 year Winter I+20%	16.767	15.340	-0.199	0.000	0.45	0.745	1.9	96.1	OK
A1067-7.000	A1067-17	15 minute 5 year Winter I+20%	16.314	14.969	-0.111	0.000	0.12	0.192	0.7	5.3	OK
A1067-8.000	A1067-18	15 minute 5 year Winter I+20%	17.211	15.843	-0.168	0.000	0.14	0.059	1.3	10.0	OK
A1067-7.001	A1067-19	15 minute 5 year Winter I+20%	16.485	14.961	0.001	0.000	0.45	0.777	0.8	17.0	SURCHARGED
A1067-1.007	A1067-20	15 minute 5 year Winter I+20%	16.101	14.923	-0.080	0.000	0.96	1.665	1.2	111.9	OK
A1067-1.008	A1067-FB	15 minute 5 year Winter I+20%	16.040	14.726	-0.189	0.000	0.49	21.364	1.9	104.6	OK
A1067-9.000	A1067-21	15 minute 5 year Winter I+20%	16.056	15.717	-0.339	0.000	0.15	0.000	0.2	9.8	OK
A1067-9.001	A1067-22	10080 minute 5 year Winter I+20%	15.892	14.647	-0.045	0.000	0.00	0.552	0.0	0.1	OK
A1067-9.002	A1067-23	10080 minute 5 year Winter I+20%	16.040	14.600	0.000	0.000	0.00	2.860	0.0	0.1	SURCHARGED*
A1067-1.009	A1067-IB	10080 minute 5 year Winter I+20%	16.040	14.647	-1.193	0.000	0.00	516.137	0.0	0.0	OK
A1067-10.000	A1067-24	15 minute 5 year Summer I+20%	15.840	15.630	-0.210	0.000	0.00	0.000	0.0	0.0	OK
A1067-10.001	A1067-25	15 minute 5 year Summer I+20%	16.394	14.436	-0.300	0.000	0.00	0.000	0.0	0.0	OK*
A1067-10.002	A1067-26	15 minute 5 year Summer I+20%	16.431	14.404	-0.300	0.000	0.00	0.000	0.0	0.0	OK

10 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-A1067

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coeffiecient 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 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 610500 313350 TG 10500 13350 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Catchment Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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) 5, 10, 30, 100
Climate Change (%) 20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A1067-1.000	A1067-01	15 minute 10 year Winter I+40%	22.709	21.330	-0.179	0.000	0.09	0.035	0.8	4.4	OK
A1067-2.000	A1067-02	15 minute 10 year Winter I+40%	22.871	21.469	-0.202	0.000	0.02	0.005	1.0	1.8	OK
A1067-1.001	A1067-03	15 minute 10 year Winter I+40%	22.550	21.163	-0.132	0.000	0.36	0.141	1.6	24.6	OK
A1067-3.000	A1067-04	15 minute 10 year Winter I+40%	21.349	20.004	-0.136	0.000	0.33	0.024	1.4	20.2	OK
A1067-1.002	A1067-05	15 minute 10 year Winter I+40%	21.155	19.783	-0.163	0.000	0.42	0.139	2.2	67.2	OK
A1067-4.000	A1067-06	15 minute 10 year Winter I+40%	21.206	19.889	-0.108	0.000	0.53	0.032	0.9	18.2	OK
A1067-4.001	A1067-07	15 minute 10 year Winter I+40%	21.147	19.801	-0.137	0.000	0.32	0.184	1.9	26.0	OK
A1067-4.002	A1067-08	15 minute 10 year Winter I+40%	19.841	18.510	-0.113	0.000	0.48	0.220	1.4	26.0	OK
A1067-1.003	A1067-09	15 minute 10 year Winter I+40%	19.660	18.360	-0.082	0.000	0.85	0.460	2.5	133.1	OK
A1067-1.004	A1067-10	15 minute 10 year Winter I+40%	17.410	16.143	-0.067	0.000	1.00	0.476	1.4	132.8	OK
A1067-1.005	A1067-11	15 minute 10 year Winter I+40%	17.397	15.940	-0.155	0.000	0.64	0.733	2.0	130.8	OK
A1067-5.000	A1067-12	15 minute 10 year Winter I+40%	19.578	18.204	-0.174	0.000	0.11	0.040	0.9	5.6	OK
A1067-5.001	A1067-13	15 minute 10 year Winter I+40%	19.320	17.592	-0.161	0.000	0.17	0.084	1.4	12.4	OK
A1067-5.002	A1067-14	15 minute 10 year Winter I+40%	17.884	16.295	-0.146	0.000	0.26	0.083	1.6	18.7	OK
A1067-6.000	A1067-15	15 minute 10 year Winter I+40%	17.330	15.967	-0.163	0.000	0.17	0.050	1.1	9.5	OK
A1067-1.006	A1067-16	15 minute 10 year Winter I+40%	16.767	15.408	-0.131	0.000	0.74	1.308	2.1	157.5	OK
A1067-7.000	A1067-17	15 minute 10 year Winter I+40%	16.314	15.219	0.139	0.000	0.16	0.634	0.7	7.2	SURCHARGED
A1067-8.000	A1067-18	15 minute 10 year Winter I+40%	17.211	15.857	-0.154	0.000	0.21	0.074	1.4	14.6	OK
A1067-7.001	A1067-19	15 minute 10 year Winter I+40%	16.485	15.207	0.247	0.000	0.69	1.671	0.8	26.0	SURCHARGED
A1067-1.007	A1067-20	15 minute 10 year Winter I+40%	16.101	15.118	0.115	0.000	1.58	3.291	1.7	183.4	SURCHARGED
A1067-1.008	A1067-FB	10080 minute 10 year Winter I+40%	16.040	14.824	-0.091	0.000	0.01	33.915	0.8	2.2	OK
A1067-9.000	A1067-21	15 minute 10 year Winter I+40%	16.056	15.751	-0.305	0.000	0.22	0.000	0.2	14.4	OK
A1067-9.001	A1067-22	10080 minute 10 year Winter I+40%	15.892	14.824	0.132	0.000	0.00	0.797	0.0	0.2	SURCHARGED
A1067-9.002	A1067-23	10080 minute 10 year Summer I+40%	16.040	14.600	0.000	0.000	0.00	3.009	0.0	0.2	SURCHARGED*
A1067-1.009	A1067-IB	10080 minute 10 year Winter I+40%	16.040	14.824	-1.016	0.000	0.00	686.668	0.0	0.0	OK
A1067-10.000	A1067-24	15 minute 10 year Summer I+40%	15.840	15.630	-0.210	0.000	0.00	0.000	0.0	0.0	OK
A1067-10.001	A1067-25	15 minute 10 year Summer I+40%	16.394	14.436	-0.300	0.000	0.00	0.000	0.0	0.0	OK*
A1067-10.002	A1067-26	15 minute 10 year Summer I+40%	16.431	14.404	-0.300	0.000	0.00	0.000	0.0	0.0	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-A1067

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coeffiecient 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 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 610500 313350 TG 10500 13350 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Catchment Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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) 5, 10, 30, 100
Climate Change (%) 20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A1067-1.000	A1067-01	15 minute 30 year Winter I+40%	22.709	21.336	-0.173	0.000	0.12	0.041	0.9	5.9	OK
A1067-2.000	A1067-02	15 minute 30 year Winter I+40%	22.871	21.472	-0.199	0.000	0.03	0.006	0.9	2.3	OK
A1067-1.001	A1067-03	15 minute 30 year Winter I+40%	22.550	21.180	-0.115	0.000	0.47	0.180	1.7	32.8	OK
A1067-3.000	A1067-04	15 minute 30 year Winter I+40%	21.349	20.019	-0.121	0.000	0.43	0.028	1.5	26.9	OK
A1067-1.002	A1067-05	15 minute 30 year Winter I+40%	21.155	19.809	-0.137	0.000	0.56	0.180	2.3	89.4	OK
A1067-4.000	A1067-06	15 minute 30 year Winter I+40%	21.206	19.913	-0.084	0.000	0.71	0.039	0.9	24.3	OK
A1067-4.001	A1067-07	15 minute 30 year Winter I+40%	21.147	19.816	-0.122	0.000	0.42	0.218	2.0	34.7	OK
A1067-4.002	A1067-08	15 minute 30 year Winter I+40%	19.841	18.814	0.191	0.000	0.68	1.147	1.4	36.8	SURCHARGED
A1067-1.003	A1067-09	15 minute 30 year Winter I+40%	19.660	18.704	0.262	0.000	1.04	1.892	2.5	163.4	SURCHARGED
A1067-1.004	A1067-10	15 minute 30 year Winter I+40%	17.410	16.252	0.042	0.000	1.23	0.835	1.5	163.8	SURCHARGED
A1067-1.005	A1067-11	15 minute 30 year Winter I+40%	17.397	15.975	-0.119	0.000	0.79	0.898	2.1	163.1	OK
A1067-5.000	A1067-12	15 minute 30 year Winter I+40%	19.578	18.212	-0.166	0.000	0.15	0.047	0.9	7.5	OK
A1067-5.001	A1067-13	15 minute 30 year Winter I+40%	19.320	17.602	-0.151	0.000	0.23	0.099	1.5	16.5	OK
A1067-5.002	A1067-14	15 minute 30 year Winter I+40%	17.884	16.309	-0.133	0.000	0.34	0.099	1.7	24.9	OK
A1067-6.000	A1067-15	15 minute 30 year Winter I+40%	17.330	15.978	-0.152	0.000	0.22	0.059	1.2	12.7	OK
A1067-1.006	A1067-16	15 minute 30 year Winter I+40%	16.767	15.628	0.089	0.000	0.88	4.180	2.1	188.9	SURCHARGED
A1067-7.000	A1067-17	15 minute 30 year Winter I+40%	16.314	15.315	0.235	0.000	0.23	0.804	0.7	10.3	SURCHARGED
A1067-8.000	A1067-18	15 minute 30 year Winter I+40%	17.211	15.868	-0.143	0.000	0.28	0.087	1.5	19.5	OK
A1067-7.001	A1067-19	15 minute 30 year Winter I+40%	16.485	15.299	0.339	0.000	1.00	1.960	0.9	37.6	SURCHARGED
A1067-1.007	A1067-20	15 minute 30 year Winter I+40%	16.101	15.210	0.207	0.000	1.88	4.054	2.0	218.3	SURCHARGED
A1067-1.008	A1067-FB	10080 minute 30 year Winter I+40%	16.040	14.972	0.057	0.000	0.01	54.252	0.9	2.6	SURCHARGED
A1067-9.000	A1067-21	15 minute 30 year Winter I+40%	16.056	15.785	-0.271	0.000	0.30	0.000	0.2	19.2	FLOOD RISK
A1067-9.001	A1067-22	10080 minute 30 year Winter I+40%	15.892	14.972	0.280	0.000	0.00	1.001	0.0	0.2	SURCHARGED
A1067-9.002	A1067-23	10080 minute 30 year Summer I+40%	16.040	14.600	0.000	0.000	0.00	3.146	0.0	0.2	SURCHARGED*
A1067-1.009	A1067-IB	10080 minute 30 year Winter I+40%	16.040	14.972	-0.868	0.000	0.00	836.566	0.0	0.0	OK
A1067-10.000	A1067-24	15 minute 30 year Summer I+40%	15.840	15.630	-0.210	0.000	0.00	0.000	0.0	0.0	OK
A1067-10.001	A1067-25	15 minute 30 year Summer I+40%	16.394	14.436	-0.300	0.000	0.00	0.000	0.0	0.0	OK*
A1067-10.002	A1067-26	15 minute 30 year Summer I+40%	16.431	14.404	-0.300	0.000	0.00	0.000	0.0	0.0	OK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-A1067

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coeffiecient 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 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 610500 313350 TG 10500 13350 Cv (Summer) 0.750
FEH Rainfall Version 2013 Data Type Catchment Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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) 5, 10, 30, 100
Climate Change (%) 20, 40, 40, 45

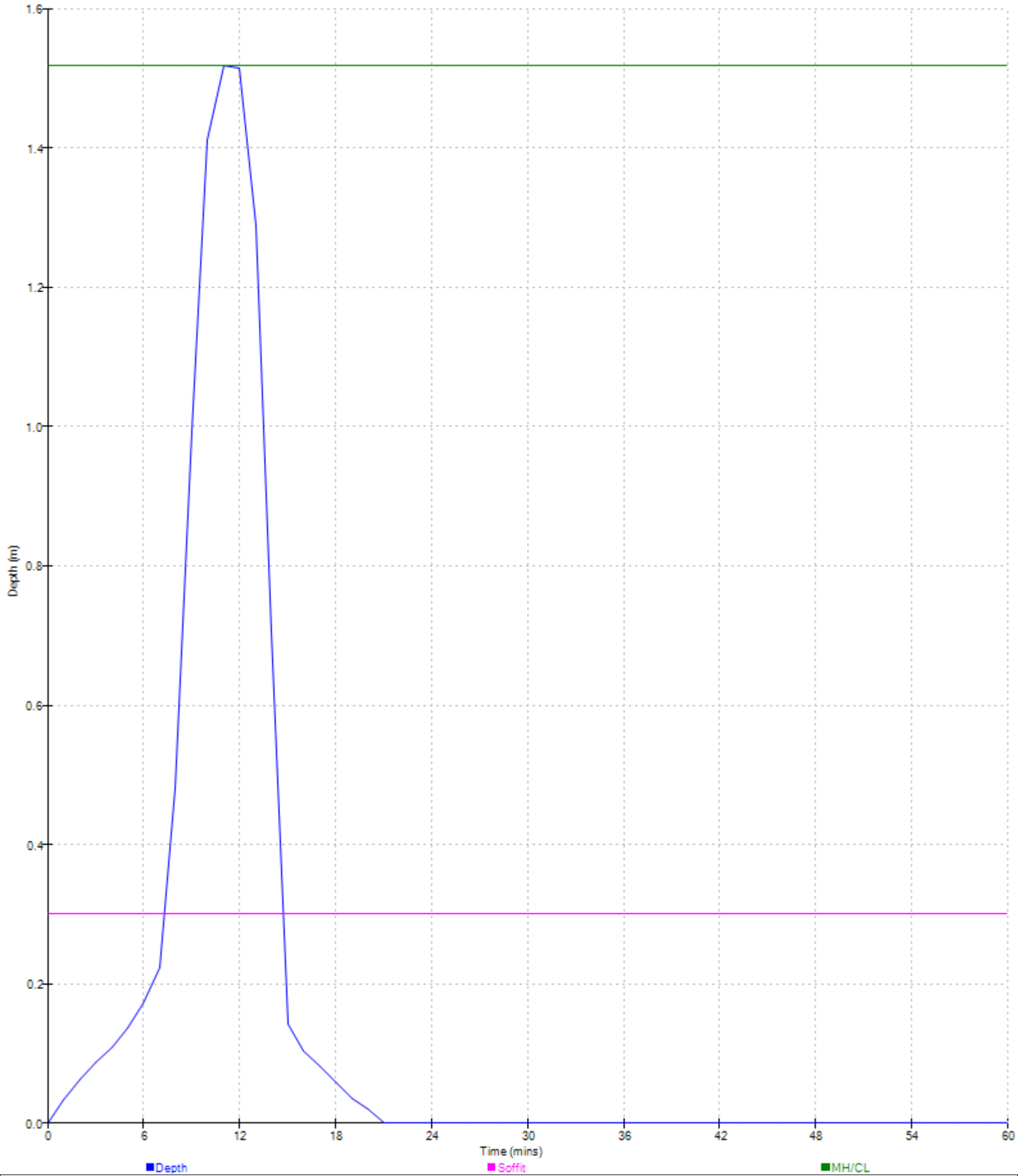
PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A1067-1.000	A1067-01	15 minute 100 year Winter I+45%	22.709	21.345	-0.164	0.000	0.16	0.049	0.9	8.0	OK
A1067-2.000	A1067-02	15 minute 100 year Winter I+45%	22.871	21.475	-0.196	0.000	0.04	0.007	1.1	3.2	OK
A1067-1.001	A1067-03	15 minute 100 year Winter I+45%	22.550	21.203	-0.092	0.000	0.64	0.261	1.9	44.2	OK
A1067-3.000	A1067-04	15 minute 100 year Winter I+45%	21.349	20.440	0.300	0.000	0.56	0.147	1.6	34.9	SURCHARGED
A1067-1.002	A1067-05	15 minute 100 year Winter I+45%	21.155	20.337	0.391	0.000	0.68	1.545	2.4	109.1	SURCHARGED
A1067-4.000	A1067-06	15 minute 100 year Winter I+45%	21.206	20.148	0.151	0.000	0.96	0.105	1.0	32.7	SURCHARGED
A1067-4.001	A1067-07	15 minute 100 year Winter I+45%	21.147	20.069	0.131	0.000	0.55	0.789	2.1	45.7	SURCHARGED
A1067-4.002	A1067-08	15 minute 100 year Winter I+45%	19.841	19.796	1.173	0.000	1.02	4.260	1.4	55.1	FLOOD RISK
A1067-1.003	A1067-09	15 minute 100 year Winter I+45%	19.660	19.660	1.218	0.287	1.20	5.256	2.7	189.4	FLOOD
A1067-1.004	A1067-10	15 minute 100 year Winter I+45%	17.410	16.531	0.321	0.000	1.39	1.790	1.7	185.3	SURCHARGED
A1067-1.005	A1067-11	15 minute 100 year Winter I+45%	17.397	16.308	0.214	0.000	0.90	1.913	2.0	184.9	SURCHARGED
A1067-5.000	A1067-12	15 minute 100 year Winter I+45%	19.578	18.223	-0.155	0.000	0.20	0.056	1.0	10.1	OK
A1067-5.001	A1067-13	15 minute 100 year Winter I+45%	19.320	17.615	-0.137	0.000	0.31	0.118	1.6	22.2	OK
A1067-5.002	A1067-14	15 minute 100 year Winter I+45%	17.884	16.326	-0.116	0.000	0.46	0.122	1.8	33.6	OK
A1067-6.000	A1067-15	15 minute 100 year Winter I+45%	17.330	15.991	-0.139	0.000	0.30	0.070	1.3	17.2	OK
A1067-1.006	A1067-16	15 minute 100 year Winter I+45%	16.767	15.855	0.316	0.000	1.01	7.349	2.1	215.5	SURCHARGED
A1067-7.000	A1067-17	15 minute 100 year Winter I+45%	16.314	15.500	0.420	0.000	0.31	1.131	0.7	13.5	SURCHARGED
A1067-8.000	A1067-18	15 minute 100 year Winter I+45%	17.211	15.883	-0.128	0.000	0.38	0.105	1.7	26.3	OK
A1067-7.001	A1067-19	15 minute 100 year Winter I+45%	16.485	15.478	0.518	0.000	1.33	2.527	1.3	49.9	SURCHARGED
A1067-1.007	A1067-20	15 minute 100 year Winter I+45%	16.101	15.314	0.311	0.000	2.18	4.777	2.3	252.8	SURCHARGED
A1067-1.008	A1067-FB	10080 minute 100 year Winter I+45%	16.040	15.222	0.307	0.000	0.01	92.879	1.0	3.0	SURCHARGED
A1067-9.000	A1067-21	15 minute 100 year Winter I+45%	16.056	15.829	-0.227	0.000	0.40	0.000	0.3	25.9	FLOOD RISK
A1067-9.001	A1067-22	10080 minute 100 year Winter I+45%	15.892	15.221	0.529	0.000	0.00	1.346	0.0	0.2	SURCHARGED
A1067-9.002	A1067-23	10080 minute 100 year Summer I+45%	16.040	14.600	0.000	0.000	0.00	3.377	0.0	0.3	SURCHARGED*
A1067-1.009	A1067-IB	10080 minute 100 year Winter I+45%	16.040	15.222	-0.618	0.000	0.00	1106.972	0.0	0.0	OK
A1067-10.000	A1067-24	15 minute 100 year Summer I+45%	15.840	15.630	-0.210	0.000	0.00	0.000	0.0	0.0	OK
A1067-10.001	A1067-25	15 minute 100 year Summer I+45%	16.394	14.436	-0.300	0.000	0.00	0.000	0.0	0.0	OK*
A1067-10.002	A1067-26	15 minute 100 year Summer I+45%	16.431	14.404	-0.300	0.000	0.00	0.000	0.0	0.0	OK

Summary of Results for 15 minute 100 year Winter (SWS-A1067)

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A1067-1.000	A1067-01	22.709	21.345	-0.164	0.000	0.16	0.049	0.9	8.0	OK
A1067-2.000	A1067-02	22.871	21.475	-0.196	0.000	0.04	0.007	1.1	3.2	OK
A1067-1.001	A1067-03	22.550	21.203	-0.092	0.000	0.64	0.261	1.9	44.2	OK
A1067-3.000	A1067-04	21.349	20.401	0.261	0.000	0.57	0.136	1.6	35.1	SURCHARGED
A1067-1.002	A1067-05	21.155	20.342	0.396	0.000	0.68	1.556	2.4	109.0	SURCHARGED
A1067-4.000	A1067-06	21.206	20.089	0.092	0.000	0.96	0.088	1.0	32.7	SURCHARGED
A1067-4.001	A1067-07	21.147	20.042	0.104	0.000	0.55	0.742	2.1	45.8	SURCHARGED
A1067-4.002	A1067-08	19.841	19.748	1.125	0.000	0.98	4.110	1.4	53.3	FLOOD RISK
A1067-1.003	A1067-09	19.660	19.660	1.218	0.688	1.20	4.980	2.7	188.3	FLOOD
A1067-1.004	A1067-10	17.410	16.517	0.307	0.000	1.38	1.742	1.7	184.2	SURCHARGED
A1067-1.005	A1067-11	17.397	16.296	0.201	0.000	0.90	1.890	2.0	184.0	SURCHARGED
A1067-5.000	A1067-12	19.578	18.223	-0.155	0.000	0.20	0.056	1.0	10.1	OK
A1067-5.001	A1067-13	19.320	17.615	-0.137	0.000	0.31	0.118	1.6	22.2	OK
A1067-5.002	A1067-14	17.884	16.326	-0.116	0.000	0.46	0.122	1.8	33.6	OK
A1067-6.000	A1067-15	17.330	15.991	-0.139	0.000	0.30	0.070	1.3	17.2	OK
A1067-1.006	A1067-16	16.767	15.847	0.308	0.000	1.00	7.246	2.1	214.2	SURCHARGED
A1067-7.000	A1067-17	16.314	15.493	0.413	0.000	0.30	1.119	0.7	13.3	SURCHARGED
A1067-8.000	A1067-18	17.211	15.883	-0.128	0.000	0.38	0.105	1.7	26.3	OK
A1067-7.001	A1067-19	16.485	15.472	0.512	0.000	1.31	2.507	1.2	49.3	SURCHARGED
A1067-1.007	A1067-20	16.101	15.310	0.307	0.000	2.17	4.754	2.3	252.0	SURCHARGED
A1067-1.008	A1067-FB	16.040	14.921	0.006	0.000	1.04	47.111	2.2	222.8	SURCHARGED
A1067-9.000	A1067-21	16.056	15.829	-0.227	0.000	0.40	0.000	0.3	25.9	FLOOD RISK
A1067-9.001	A1067-22	15.892	14.369	-0.323	0.000	0.15	0.169	0.8	26.1	OK
A1067-9.002	A1067-23	16.040	14.370	-0.230	0.000	0.06	1.047	1.5	26.1	OK*
A1067-1.009	A1067-IB	16.040	14.370	-1.470	0.000	0.00	268.029	0.0	0.0	OK
A1067-10.000	A1067-24	15.840	15.630	-0.210	0.000	0.00	0.000	0.0	0.0	OK
A1067-10.001	A1067-25	16.394	14.436	-0.300	0.000	0.00	0.000	0.0	0.0	OK*
A1067-10.002	A1067-26	16.431	14.404	-0.300	0.000	0.00	0.000	0.0	0.0	OK

Graphs for Pipe A1067-1.003 US/MH A1067-09 (SWS-A1067)
15 minute 100 year Winter
Status: FLOOD



Catchment 1 Basin 1 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:30 no flooding check
All pipes pass for 1:30
1:100 flooding check
The assessment* identifies that flooding resulting from 100 +CC storms will be cointained within the scheme extents.

Attenuation
100 + CC Peak Water Level: 16.738m
Cover level: 17.410m
Freeboard: achieved

*Assessment using FloodFlow has been undertaken for the 100yr Critical storms identified from the Microdrainage modelling. This analysis undertakes a more detailed assessment of flooding which considers the proposed topography.

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-ML1

Pipe Sizes Circular Manhole Sizes Adoptable

FEH Rainfall Model

Return Period (years)	2	Volumetric Runoff Coeff.	0.750
		PIMP (%)	100
FEH Rainfall Version	2013	Add Flow / Climate Change (%)	0
Site Location	GB 610500 313350 TG 10500 13350	Minimum Backdrop Height (m)	0.200
Data Type	Catchment	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	250	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	1000

Designed with Level Soffits

Time Area Diagram for SWS-ML1

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.578	4-8	1.053	8-12	0.406	12-16	0.013

Total Area Contributing (ha) = 2.050

Total Pipe Volume (m³) = 275.035

Network Design Table for SWS-ML1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML1-1.000	56.620	0.366	154.7	0.104	5.00	0.0	0.600		o	300	Pipe/Conduit	
ML1-1.001	75.338	0.486	154.9	0.078	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML1-2.000	82.360	0.450	183.0	0.120	5.00	0.0	1.500		o	300	Pipe/Conduit	
ML1-2.001	80.587	0.320	251.8	0.163	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML1-2.002	28.983	0.120	241.5	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-1.002	21.158	0.187	113.1	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-1.003	42.911	0.413	103.9	0.026	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-3.000	6.921	0.846	8.2	0.007	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML1-1.004	15.144	0.166	91.1	0.046	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-1.005	61.490	0.672	91.5	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-4.000	49.235	0.538	91.5	0.056	5.00	0.0		0.015	5 \/	150	1:5 V	
ML1-1.006	64.980	0.711	91.4	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-5.000	65.590	0.676	97.0	0.068	5.00	0.0		0.015	5 \/	150	1:5 V	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML1-1.000	61.05	5.75	20.927	0.104	0.0	0.0	0.0	1.26	89.2	17.2
ML1-1.001	56.64	6.74	20.561	0.182	0.0	0.0	0.0	1.26	89.1	27.9
ML1-2.000	58.35	6.34	20.965	0.120	0.0	0.0	0.0	1.02	72.4	18.9
ML1-2.001	53.07	7.67	20.440	0.282	0.0	0.0	0.0	1.01	111.4	40.6
ML1-2.002	51.62	8.09	20.120	0.282	0.0	0.0	0.0	1.16	128.3	40.6
ML1-1.002	50.93	8.30	20.000	0.464	0.0	0.0	0.0	1.70	188.1	64.0
ML1-1.003	49.65	8.70	19.813	0.490	0.0	0.0	0.0	1.78	196.3	65.9
ML1-3.000	64.64	5.03	20.246	0.007	0.0	0.0	0.0	4.60	183.0	1.2
ML1-1.004	49.24	8.83	19.400	0.543	0.0	0.0	0.0	1.90	209.7	72.4
ML1-1.005	47.66	9.37	19.234	0.543	0.0	0.0	0.0	1.90	209.3	72.4
ML1-4.000	61.42	5.67	21.690	0.056	0.0	0.0	0.0	1.22	137.6	9.3
ML1-1.006	46.10	9.94	18.562	0.599	0.0	0.0	0.0	1.90	209.4	74.8
ML1-5.000	60.24	5.92	21.232	0.068	0.0	0.0	0.0	1.19	133.7	11.1

Network Design Table for SWS-ML1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML1-1.007	76.438	0.836	91.4	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-6.000	76.738	1.170	65.6	0.074	5.00	0.0		0.015	5 \/	150	1:5 V	
ML1-1.008	72.465	0.634	114.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML1-7.000	72.838	1.688	43.2	0.100	5.00	0.0		0.015	5 \/	150	1:5 V	
ML1-1.009	16.955	0.065	260.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML1-8.000	65.277	1.144	57.1	0.106	5.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML1-8.001	84.575	0.968	87.4	0.136	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML1-8.002	67.459	1.073	62.9	0.123	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML1-8.003	31.204	0.559	55.8	0.073	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML1-1.010	24.983	0.200	124.9	0.005	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML1-9.000	48.206	0.307	157.0	0.051	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML1-9.001	50.648	0.509	99.5	0.107	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML1-10.000	19.816	0.994	19.9	0.144	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML1-9.002	25.581	0.330	77.5	0.024	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML1-11.000	7.570	0.128	59.1	0.000	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML1-9.003	74.403	0.984	75.6	0.055	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML1-9.004	82.855	0.966	85.8	0.061	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML1-9.005	74.622	1.232	60.6	0.053	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML1-9.006	15.325	0.732	20.9	0.010	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML1-1.011	8.137	0.155	52.5	0.261	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML1-1.012	21.066	0.041	511.5	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML1-1.007	44.42	10.61	17.851	0.667	0.0	0.0	0.0	1.90	209.4	80.2
ML1-6.000	60.41	5.89	20.631	0.074	0.0	0.0	0.0	1.44	162.6	12.0
ML1-1.008	42.94	11.25	16.964	0.740	0.0	0.0	0.0	1.90	302.3	86.1
ML1-7.000	61.37	5.68	19.518	0.100	0.0	0.0	0.0	1.78	200.4	16.7
ML1-1.009	42.45	11.48	16.330	0.841	0.0	0.0	0.0	1.25	199.4	96.7
ML1-8.000	56.93	6.67	21.195	0.106	0.0	0.0	0.0	0.65	321.8	16.3
ML1-8.001	47.70	9.36	20.051	0.242	0.0	0.0	0.0	0.53	260.1	31.2
ML1-8.002	43.12	11.17	19.083	0.364	0.0	0.0	0.0	0.62	306.6	42.6
ML1-8.003	41.42	11.96	18.010	0.437	0.0	0.0	0.0	0.66	325.4	49.1
ML1-1.010	41.00	12.17	16.265	1.283	0.0	0.0	0.0	2.00	433.6	142.5
ML1-9.000	60.44	5.88	21.275	0.051	0.0	0.0	0.0	0.91	36.4	8.4
ML1-9.001	57.72	6.49	20.893	0.158	0.0	0.0	0.0	1.39	98.3	24.8
ML1-10.000	64.19	5.11	21.453	0.144	0.0	0.0	0.0	2.94	117.1	25.0
ML1-9.002	56.59	6.76	20.384	0.326	0.0	0.0	0.0	1.58	111.4	49.9
ML1-11.000	64.39	5.07	20.257	0.000	0.0	0.0	0.0	1.70	67.8	0.0
ML1-9.003	53.96	7.43	19.979	0.381	0.0	0.0	0.0	1.85	203.8	55.7
ML1-9.004	51.16	8.23	18.995	0.442	0.0	0.0	0.0	1.73	191.3	61.3
ML1-9.005	49.25	8.83	18.029	0.495	0.0	0.0	0.0	2.06	227.8	66.0
ML1-9.006	49.05	8.89	16.797	0.505	0.0	0.0	0.0	3.98	439.1	67.1
ML1-1.011	40.92	12.21	16.065	2.050	0.0	0.0	0.0	3.37	951.7	227.2
ML1-1.012	40.28	12.54	15.410	2.050	0.0	0.0	0.0	1.07	302.5	227.2

Conduit Sections for SWS-ML1

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-2	2V	4001	200			0.487	0.495

Manhole Schedules for SWS-ML1

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)
ML1-01	22.427	1.500	Open Manhole	1200	ML1-1.000	20.927	300				
ML1-02	22.657	2.096	Open Manhole	1200	ML1-1.001	20.561	300	ML1-1.000	20.561	300	
ML1-03	22.465	1.500	Open Manhole	1050	ML1-2.000	20.965	300				
ML1-04	22.630	2.190	Open Manhole	1050	ML1-2.001	20.440	375	ML1-2.000	20.515	300	
ML1-05	22.545	2.425	Open Manhole	1050	ML1-2.002	20.120	375	ML1-2.001	20.120	375	
ML1-06	22.640	2.640	Open Manhole	1500	ML1-1.002	20.000	375	ML1-1.001	20.075	300	
								ML1-2.002	20.000	375	
ML1-07	22.485	2.672	Open Manhole	1500	ML1-1.003	19.813	375	ML1-1.002	19.813	375	
ML1-08	21.671	1.425	Open Manhole	600	ML1-3.000	20.246	225				
ML1-09	21.850	2.450	Open Manhole	1500	ML1-1.004	19.400	375	ML1-1.003	19.400	375	
								ML1-3.000	19.400	225	
ML1-10	21.927	2.693	Open Manhole	1500	ML1-1.005	19.234	375	ML1-1.004	19.234	375	
ML1-11	21.802	0.112	Open Manhole	10	ML1-4.000	21.690	150				
ML1-12	21.302	2.740	Open Manhole	1500	ML1-1.006	18.562	375	ML1-1.005	18.562	375	
								ML1-4.000	21.152	150	2365
ML1-13	21.382	0.150	Open Manhole	10	ML1-5.000	21.232	150				
ML1-14	20.706	2.855	Open Manhole	1500	ML1-1.007	17.851	375	ML1-1.006	17.851	375	
								ML1-5.000	20.556	150	2480
ML1-15	20.781	0.150	Open Manhole	10	ML1-6.000	20.631	150				
ML1-16	19.612	2.648	Open Manhole	1500	ML1-1.008	16.964	450	ML1-1.007	17.015	375	
								ML1-6.000	19.461	150	2197
ML1-17	19.667	0.149	Open Manhole	10	ML1-7.000	19.518	150				
ML1-18	17.980	1.650	Open Manhole	1500	ML1-1.009	16.330	450	ML1-1.008	16.330	450	
								ML1-7.000	17.830	150	1200
ML1-19	21.444	0.249	Open Manhole	10	ML1-8.000	21.195	-2				
ML1-20	20.268	0.217	Open Manhole	10	ML1-8.001	20.051	-2	ML1-8.000	20.051	-2	
ML1-21	19.299	0.216	Open Manhole	10	ML1-8.002	19.083	-2	ML1-8.001	19.083	-2	
ML1-22	18.227	0.217	Open Manhole	10	ML1-8.003	18.010	-2	ML1-8.002	18.010	-2	
ML1-23	17.605	1.340	Open Manhole	1500	ML1-1.010	16.265	525	ML1-1.009	16.265	450	
								ML1-8.003	17.451	-2	861
ML1-24	22.700	1.425	Open Manhole	1050	ML1-9.000	21.275	225				
ML1-25	22.371	1.478	Open Manhole	1050	ML1-9.001	20.893	300	ML1-9.000	20.968	225	
ML1-26	22.001	0.548	Open Manhole	600	ML1-10.000	21.453	225				
ML1-27	21.875	1.491	Open Manhole	1050	ML1-9.002	20.384	300	ML1-9.001	20.384	300	
								ML1-10.000	20.459	225	
ML1-28	21.682	1.425	Open Manhole	600	ML1-11.000	20.257	225				
ML1-29	21.484	1.505	Open Manhole	1050	ML1-9.003	19.979	375	ML1-9.002	20.054	300	
								ML1-11.000	20.129	225	
ML1-30	20.495	1.500	Open Manhole	1050	ML1-9.004	18.995	375	ML1-9.003	18.995	375	
ML1-31	19.529	1.500	Open Manhole	1050	ML1-9.005	18.029	375	ML1-9.004	18.029	375	
ML1-32	18.292	1.495	Open Manhole	1500	ML1-9.006	16.797	375	ML1-9.005	16.797	375	
ML1-33	17.474	1.409	Open Manhole	1500	ML1-1.011	16.065	600	ML1-1.010	16.065	525	
								ML1-9.006	16.065	375	
ML1-Basin	17.410	2.000	Open Manhole	1500	ML1-1.012	15.410	600	ML1-1.011	15.910	600	500
ML1-35	17.470	2.102	Open Manhole	1500		OUTFALL		ML1-1.012	15.368	600	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML1-01	18199.292	526384.748	18199.292	526384.748	Required	
ML1-02	18245.790	526417.056	18245.790	526417.056	Required	
ML1-03	18160.023	526386.161	18160.023	526386.161	Required	
ML1-04	18226.620	526434.616	18226.620	526434.616	Required	

Manhole Schedules for SWS-ML1

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML1-05	18290.296	526484.008	18290.296	526484.008	Required	
ML1-06	18307.309	526460.543	18307.309	526460.543	Required	
ML1-07	18328.232	526463.689	18328.232	526463.689	Required	
ML1-08	18376.873	526473.623	18376.873	526473.623	Required	
ML1-09	18369.953	526473.726	18369.953	526473.726	Required	
ML1-10	18382.930	526481.533	18382.930	526481.533	Required	
ML1-11	18392.596	526473.879	18392.596	526473.879	Required	
ML1-12	18434.658	526448.287	18434.658	526448.287	Required	
ML1-13	18433.457	526447.238	18433.457	526447.238	Required	
ML1-14	18492.547	526418.770	18492.547	526418.770	Required	
ML1-15	18491.714	526417.571	18491.714	526417.571	Required	
ML1-16	18562.667	526388.342	18562.667	526388.342	Required	
ML1-17	18561.783	526386.947	18561.783	526386.947	Required	
ML1-18	18630.782	526363.613	18630.782	526363.613	Required	
ML1-19	18407.096	526480.157	18407.096	526480.157	Required	
ML1-20	18464.202	526448.534	18464.202	526448.534	Required	
ML1-21	18541.706	526414.680	18541.706	526414.680	Required	
ML1-22	18604.637	526390.382	18604.637	526390.382	Required	
ML1-23	18634.145	526380.232	18634.145	526380.232	Required	
ML1-24	18308.713	526543.349	18308.713	526543.349	Required	
ML1-25	18356.538	526549.404	18356.538	526549.404	Required	
ML1-26	18365.204	526502.497	18365.204	526502.497	Required	
ML1-27	18384.466	526507.151	18384.466	526507.151	Required	
ML1-28	18398.210	526482.591	18398.210	526482.591	Required	
ML1-29	18402.391	526488.901	18402.391	526488.901	Required	
ML1-30	18467.429	526452.764	18467.429	526452.764	Required	

Manhole Schedules for SWS-ML1

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML1-31	18543.384	526419.659	18543.384	526419.659	Required	
ML1-32	18612.897	526392.524	18612.897	526392.524	Required	
ML1-33	18624.018	526403.070	18624.018	526403.070	Required	
ML1-Basin	18631.793	526405.469	18631.793	526405.469	Required	
ML1-35	18652.824	526406.687			No Entry	

PIPELINE SCHEDULES for SWS-ML1

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)
ML1-1.000	o	300	ML1-01	22.427	20.927	1.200	Open Manhole	1200
ML1-1.001	o	300	ML1-02	22.657	20.561	1.796	Open Manhole	1200
ML1-2.000	o	300	ML1-03	22.465	20.965	1.200	Open Manhole	1050
ML1-2.001	o	375	ML1-04	22.630	20.440	1.815	Open Manhole	1050
ML1-2.002	o	375	ML1-05	22.545	20.120	2.050	Open Manhole	1050
ML1-1.002	o	375	ML1-06	22.640	20.000	2.265	Open Manhole	1500
ML1-1.003	o	375	ML1-07	22.485	19.813	2.297	Open Manhole	1500
ML1-3.000	o	225	ML1-08	21.671	20.246	1.200	Open Manhole	600
ML1-1.004	o	375	ML1-09	21.850	19.400	2.075	Open Manhole	1500
ML1-1.005	o	375	ML1-10	21.927	19.234	2.318	Open Manhole	1500
ML1-4.000	5 \/	150	ML1-11	21.802	21.690	-0.038	Open Manhole	10
ML1-1.006	o	375	ML1-12	21.302	18.562	2.365	Open Manhole	1500
ML1-5.000	5 \/	150	ML1-13	21.382	21.232	0.000	Open Manhole	10
ML1-1.007	o	375	ML1-14	20.706	17.851	2.480	Open Manhole	1500
ML1-6.000	5 \/	150	ML1-15	20.781	20.631	0.000	Open Manhole	10
ML1-1.008	o	450	ML1-16	19.612	16.964	2.198	Open Manhole	1500
ML1-7.000	5 \/	150	ML1-17	19.667	19.518	-0.001	Open Manhole	10
ML1-1.009	o	450	ML1-18	17.980	16.330	1.200	Open Manhole	1500
ML1-8.000	2V	-2	ML1-19	21.444	21.195	0.049	Open Manhole	10
ML1-8.001	2V	-2	ML1-20	20.268	20.051	0.017	Open Manhole	10
ML1-8.002	2V	-2	ML1-21	19.299	19.083	0.016	Open Manhole	10
ML1-8.003	2V	-2	ML1-22	18.227	18.010	0.017	Open Manhole	10

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)
ML1-1.000	56.620	154.7	ML1-02	22.657	20.561	1.796	Open Manhole	1200
ML1-1.001	75.338	154.9	ML1-06	22.640	20.075	2.266	Open Manhole	1500
ML1-2.000	82.360	183.0	ML1-04	22.630	20.515	1.815	Open Manhole	1050
ML1-2.001	80.587	251.8	ML1-05	22.545	20.120	2.050	Open Manhole	1050
ML1-2.002	28.983	241.5	ML1-06	22.640	20.000	2.265	Open Manhole	1500
ML1-1.002	21.158	113.1	ML1-07	22.485	19.813	2.297	Open Manhole	1500
ML1-1.003	42.911	103.9	ML1-09	21.850	19.400	2.075	Open Manhole	1500
ML1-3.000	6.921	8.2	ML1-09	21.850	19.400	2.225	Open Manhole	1500
ML1-1.004	15.144	91.1	ML1-10	21.927	19.234	2.318	Open Manhole	1500
ML1-1.005	61.490	91.5	ML1-12	21.302	18.562	2.365	Open Manhole	1500
ML1-4.000	49.235	91.5	ML1-12	21.302	21.152	0.000	Open Manhole	1500
ML1-1.006	64.980	91.4	ML1-14	20.706	17.851	2.480	Open Manhole	1500
ML1-5.000	65.590	97.0	ML1-14	20.706	20.556	0.000	Open Manhole	1500
ML1-1.007	76.438	91.4	ML1-16	19.612	17.015	2.222	Open Manhole	1500
ML1-6.000	76.738	65.6	ML1-16	19.612	19.461	0.001	Open Manhole	1500
ML1-1.008	72.465	114.3	ML1-18	17.980	16.330	1.200	Open Manhole	1500
ML1-7.000	72.838	43.2	ML1-18	17.980	17.830	0.000	Open Manhole	1500
ML1-1.009	16.955	260.9	ML1-23	17.605	16.265	0.890	Open Manhole	1500
ML1-8.000	65.277	57.1	ML1-20	20.268	20.051	0.017	Open Manhole	10
ML1-8.001	84.575	87.4	ML1-21	19.299	19.083	0.016	Open Manhole	10
ML1-8.002	67.459	62.9	ML1-22	18.227	18.010	0.017	Open Manhole	10
ML1-8.003	31.204	55.8	ML1-23	17.605	17.451	-0.046	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML1

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)
ML1-1.010	o	525	ML1-23	17.605	16.265	0.815	Open Manhole	1500
ML1-9.000	o	225	ML1-24	22.700	21.275	1.200	Open Manhole	1050
ML1-9.001	o	300	ML1-25	22.371	20.893	1.178	Open Manhole	1050
ML1-10.000	o	225	ML1-26	22.001	21.453	0.323	Open Manhole	600
ML1-9.002	o	300	ML1-27	21.875	20.384	1.191	Open Manhole	1050
ML1-11.000	o	225	ML1-28	21.682	20.257	1.200	Open Manhole	600
ML1-9.003	o	375	ML1-29	21.484	19.979	1.130	Open Manhole	1050
ML1-9.004	o	375	ML1-30	20.495	18.995	1.125	Open Manhole	1050
ML1-9.005	o	375	ML1-31	19.529	18.029	1.125	Open Manhole	1050
ML1-9.006	o	375	ML1-32	18.292	16.797	1.120	Open Manhole	1500
ML1-1.011	o	600	ML1-33	17.474	16.065	0.809	Open Manhole	1500
ML1-1.012	o	600	ML1-Basin	17.410	15.410	1.400	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)
ML1-1.010	24.983	124.9	ML1-33	17.474	16.065	0.884	Open Manhole	1500
ML1-9.000	48.206	157.0	ML1-25	22.371	20.968	1.178	Open Manhole	1050
ML1-9.001	50.648	99.5	ML1-27	21.875	20.384	1.191	Open Manhole	1050
ML1-10.000	19.816	19.9	ML1-27	21.875	20.459	1.191	Open Manhole	1050
ML1-9.002	25.581	77.5	ML1-29	21.484	20.054	1.130	Open Manhole	1050
ML1-11.000	7.570	59.1	ML1-29	21.484	20.129	1.130	Open Manhole	1050
ML1-9.003	74.403	75.6	ML1-30	20.495	18.995	1.125	Open Manhole	1050
ML1-9.004	82.855	85.8	ML1-31	19.529	18.029	1.125	Open Manhole	1050
ML1-9.005	74.622	60.6	ML1-32	18.292	16.797	1.120	Open Manhole	1500
ML1-9.006	15.325	20.9	ML1-33	17.474	16.065	1.034	Open Manhole	1500
ML1-1.011	8.137	52.5	ML1-Basin	17.410	15.910	0.900	Open Manhole	1500
ML1-1.012	21.066	511.5	ML1-35	17.470	15.368	1.502	Open Manhole	1500

Free Flowing Outfall Details for SWS-ML1

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML1-1.012	ML1-35	17.470	15.368	0.000	1500	0

Simulation Criteria for SWS-ML1

Volumetric Runoff Coeff	0.840	Manhole Headloss Coeff (Global)	0.500	Inlet Coeffiecient	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	45.000	Run Time (mins)	60
Hot Start Level (mm)	0	MADD Factor * 10m³/ha Storage	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	No
Return Period (years)	100	Winter Storms	Yes
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840
Data Type	Catchment	Storm Duration (mins)	15

Online Controls for SWS-ML1

Hydro-Brake® Optimum Manhole: ML1-Basin, DS/PN: ML1-1.012, Volume (m³): 5.4

Unit Reference	MD-SHE-0270-4300-1500-4300	Sump Available	Yes
Design Head (m)	1.500	Diameter (mm)	270
Design Flow (l/s)	43.0	Invert Level (m)	15.410
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	300
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1800
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.500	43.0	Kick-Flo®	1.053	36.3
Flush-Flo™	0.489	43.0	Mean Flow over Head Range	-	36.5

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	8.6	0.600	42.7	1.600	44.4	2.600	56.1	5.000	77.0	7.500	93.8
0.200	27.8	0.800	41.4	1.800	46.9	3.000	60.1	5.500	80.6	8.000	96.8
0.300	41.3	1.000	38.1	2.000	49.4	3.500	64.7	6.000	84.1	8.500	99.7
0.400	42.7	1.200	38.6	2.200	51.7	4.000	69.1	6.500	87.5	9.000	102.5
0.500	43.0	1.400	41.6	2.400	53.9	4.500	73.1	7.000	90.7	9.500	105.2

Storage Structures for SWS-ML1

Tank or Pond Manhole: ML1-Basin, DS/PN: ML1-1.012

Invert Level (m) 15.410

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	541.7	0.500	867.8	1.600	1294.2	1.601	1359.4	2.000	1557.8

Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML1

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 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	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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
Climate Change (%)	20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML1-1.000	ML1-01	15 minute 1 year Winter I+20%	22.427	21.019	-0.208	0.000	0.20	0.099	1.0	16.9	OK
ML1-1.001	ML1-02	15 minute 1 year Winter I+20%	22.657	20.678	-0.183	0.000	0.31	0.323	1.1	26.8	OK
ML1-2.000	ML1-03	15 minute 1 year Winter I+20%	22.465	21.075	-0.190	0.000	0.26	0.091	0.9	18.6	OK
ML1-2.001	ML1-04	15 minute 1 year Winter I+20%	22.630	20.601	-0.214	0.000	0.36	0.286	0.9	38.8	OK
ML1-2.002	ML1-05	15 minute 1 year Winter I+20%	22.545	20.271	-0.224	0.000	0.34	0.842	0.9	38.3	OK
ML1-1.002	ML1-06	15 minute 1 year Winter I+20%	22.640	20.165	-0.210	0.000	0.40	1.144	1.4	64.1	OK
ML1-1.003	ML1-07	15 minute 1 year Winter I+20%	22.485	19.971	-0.217	0.000	0.37	0.602	1.5	66.3	OK
ML1-3.000	ML1-08	15 minute 1 year Winter I+20%	21.671	20.256	-0.215	0.000	0.01	0.001	1.2	1.2	OK
ML1-1.004	ML1-09	15 minute 1 year Winter I+20%	21.850	19.577	-0.198	0.000	0.45	0.721	1.4	71.6	OK
ML1-1.005	ML1-10	15 minute 1 year Winter I+20%	21.927	19.391	-0.218	0.000	0.36	0.524	1.6	71.6	OK
ML1-4.000	ML1-11	15 minute 1 year Winter I+20%	21.802	21.745	-0.095	0.000	0.07	0.000	0.6	9.3	FLOOD RISK
ML1-1.006	ML1-12	15 minute 1 year Winter I+20%	21.302	18.723	-0.213	0.000	0.38	0.611	1.7	75.7	OK
ML1-5.000	ML1-13	15 minute 1 year Winter I+20%	21.382	21.292	-0.090	0.000	0.09	0.000	0.6	11.5	FLOOD RISK
ML1-1.007	ML1-14	15 minute 1 year Winter I+20%	20.706	18.019	-0.207	0.000	0.41	0.652	1.7	81.5	OK
ML1-6.000	ML1-15	15 minute 1 year Winter I+20%	20.781	20.688	-0.093	0.000	0.08	0.000	0.8	12.4	FLOOD RISK
ML1-1.008	ML1-16	15 minute 1 year Winter I+20%	19.612	17.136	-0.278	0.000	0.31	0.495	1.6	86.9	OK
ML1-7.000	ML1-17	15 minute 1 year Winter I+20%	19.667	19.578	-0.090	0.000	0.09	0.000	1.0	16.8	FLOOD RISK
ML1-1.009	ML1-18	15 minute 1 year Winter I+20%	17.980	16.582	-0.198	0.000	0.60	1.619	1.0	94.0	OK
ML1-8.000	ML1-19	15 minute 1 year Winter I+20%	21.444	21.240	-0.155	0.000	0.05	0.000	0.3	16.3	FLOOD RISK
ML1-8.001	ML1-20	15 minute 1 year Winter I+20%	20.268	20.125	-0.126	0.000	0.12	0.288	0.3	31.5	FLOOD RISK
ML1-8.002	ML1-21	15 minute 1 year Winter I+20%	19.299	19.162	-0.121	0.000	0.14	0.474	0.4	44.1	FLOOD RISK
ML1-8.003	ML1-22	15 minute 1 year Winter I+20%	18.227	18.091	-0.119	0.000	0.16	0.350	0.4	52.1	FLOOD RISK
ML1-1.010	ML1-23	15 minute 1 year Winter I+20%	17.605	16.504	-0.286	0.000	0.42	1.395	1.5	145.5	OK
ML1-9.000	ML1-24	15 minute 1 year Winter I+20%	22.700	21.350	-0.150	0.000	0.24	0.061	0.7	8.4	OK
ML1-9.001	ML1-25	15 minute 1 year Winter I+20%	22.371	20.995	-0.198	0.000	0.25	0.088	1.1	23.3	OK
ML1-10.000	ML1-26	15 minute 1 year Winter I+20%	22.001	21.526	-0.152	0.000	0.23	0.019	2.2	24.1	OK
ML1-9.002	ML1-27	15 minute 1 year Winter I+20%	21.875	20.534	-0.150	0.000	0.49	0.372	1.4	50.1	OK
ML1-11.000	ML1-28	15 minute 1 year Summer I+20%	21.682	20.257	-0.225	0.000	0.00	0.000	0.0	0.0	OK
ML1-9.003	ML1-29	15 minute 1 year Winter I+20%	21.484	20.118	-0.236	0.000	0.29	0.156	1.6	56.3	OK
ML1-9.004	ML1-30	15 minute 1 year Winter I+20%	20.495	19.149	-0.221	0.000	0.34	0.352	1.5	62.7	OK
ML1-9.005	ML1-31	15 minute 1 year Winter I+20%	19.529	18.174	-0.230	0.000	0.31	0.345	1.8	68.6	OK
ML1-9.006	ML1-32	15 minute 1 year Winter I+20%	18.292	16.913	-0.259	0.000	0.21	0.280	2.4	69.8	OK
ML1-1.011	ML1-33	15 minute 1 year Winter I+20%	17.474	16.403	-0.262	0.000	0.60	3.082	1.5	237.8	OK
ML1-1.012	ML1-Basin	120 minute 1 year Winter I+20%	17.410	15.707	-0.303	0.000	0.18	187.853	0.7	38.3	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML1

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	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	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML1-1.000	ML1-01	15 minute 5 year Winter I+20%	22.427	21.046	-0.181	0.000	0.32	0.129	1.1	26.9	OK
ML1-1.001	ML1-02	15 minute 5 year Winter I+20%	22.657	20.715	-0.146	0.000	0.50	0.557	1.2	42.5	OK
ML1-2.000	ML1-03	15 minute 5 year Winter I+20%	22.465	21.108	-0.157	0.000	0.42	0.119	1.0	29.5	OK
ML1-2.001	ML1-04	15 minute 5 year Winter I+20%	22.630	20.652	-0.163	0.000	0.58	0.501	1.0	61.6	OK
ML1-2.002	ML1-05	15 minute 5 year Winter I+20%	22.545	20.317	-0.178	0.000	0.54	1.356	1.0	60.9	OK
ML1-1.002	ML1-06	15 minute 5 year Winter I+20%	22.640	20.218	-0.157	0.000	0.64	1.869	1.5	101.5	OK
ML1-1.003	ML1-07	15 minute 5 year Winter I+20%	22.485	20.020	-0.168	0.000	0.58	0.912	1.7	104.9	OK
ML1-3.000	ML1-08	15 minute 5 year Winter I+20%	21.671	20.262	-0.209	0.000	0.01	0.003	1.6	1.9	OK
ML1-1.004	ML1-09	15 minute 5 year Winter I+20%	21.850	19.637	-0.138	0.000	0.71	1.202	1.6	113.9	OK
ML1-1.005	ML1-10	15 minute 5 year Winter I+20%	21.927	19.440	-0.169	0.000	0.58	0.773	1.8	113.3	OK
ML1-4.000	ML1-11	15 minute 5 year Winter I+20%	21.802	21.755	-0.085	0.000	0.11	0.000	0.7	14.8	FLOOD RISK
ML1-1.006	ML1-12	15 minute 5 year Winter I+20%	21.302	18.774	-0.163	0.000	0.61	0.923	1.9	119.9	OK
ML1-5.000	ML1-13	15 minute 5 year Winter I+20%	21.382	21.303	-0.079	0.000	0.14	0.000	0.7	18.4	FLOOD RISK
ML1-1.007	ML1-14	15 minute 5 year Winter I+20%	20.706	18.073	-0.153	0.000	0.65	1.019	1.9	128.7	OK
ML1-6.000	ML1-15	15 minute 5 year Winter I+20%	20.781	20.699	-0.082	0.000	0.12	0.000	0.9	19.8	FLOOD RISK
ML1-1.008	ML1-16	15 minute 5 year Winter I+20%	19.612	17.187	-0.227	0.000	0.48	0.763	1.8	136.9	OK
ML1-7.000	ML1-17	15 minute 5 year Winter I+20%	19.667	19.589	-0.079	0.000	0.14	0.000	1.1	26.7	FLOOD RISK
ML1-1.009	ML1-18	15 minute 5 year Winter I+20%	17.980	16.675	-0.105	0.000	0.94	2.942	1.1	147.8	OK
ML1-8.000	ML1-19	15 minute 5 year Winter I+20%	21.444	21.255	-0.140	0.000	0.08	0.000	0.3	25.9	FLOOD RISK
ML1-8.001	ML1-20	15 minute 5 year Winter I+20%	20.268	20.147	-0.104	0.000	0.19	0.378	0.4	50.1	FLOOD RISK
ML1-8.002	ML1-21	15 minute 5 year Winter I+20%	19.299	19.185	-0.098	0.000	0.23	0.623	0.4	70.4	FLOOD RISK
ML1-8.003	ML1-22	15 minute 5 year Winter I+20%	18.227	18.115	-0.095	0.000	0.26	0.464	0.5	83.1	FLOOD RISK
ML1-1.010	ML1-23	15 minute 5 year Winter I+20%	17.605	16.615	-0.175	0.000	0.68	2.331	1.7	232.2	OK
ML1-9.000	ML1-24	15 minute 5 year Winter I+20%	22.700	21.373	-0.127	0.000	0.37	0.080	0.8	13.1	OK
ML1-9.001	ML1-25	15 minute 5 year Winter I+20%	22.371	21.025	-0.168	0.000	0.39	0.163	1.3	36.8	OK
ML1-10.000	ML1-26	15 minute 5 year Winter I+20%	22.001	21.547	-0.131	0.000	0.36	0.025	2.5	38.4	OK
ML1-9.002	ML1-27	15 minute 5 year Winter I+20%	21.875	20.585	-0.099	0.000	0.78	0.607	1.6	79.3	OK
ML1-11.000	ML1-28	15 minute 5 year Summer I+20%	21.682	20.257	-0.225	0.000	0.00	0.000	0.0	0.0	OK
ML1-9.003	ML1-29	15 minute 5 year Winter I+20%	21.484	20.159	-0.195	0.000	0.46	0.239	1.7	89.3	OK
ML1-9.004	ML1-30	15 minute 5 year Winter I+20%	20.495	19.196	-0.174	0.000	0.54	0.539	1.7	99.6	OK
ML1-9.005	ML1-31	15 minute 5 year Winter I+20%	19.529	18.218	-0.186	0.000	0.50	0.538	2.0	109.0	OK
ML1-9.006	ML1-32	15 minute 5 year Winter I+20%	18.292	16.945	-0.227	0.000	0.33	0.418	2.7	110.9	OK
ML1-1.011	ML1-33	15 minute 5 year Winter I+20%	17.474	16.529	-0.136	0.000	0.95	5.026	1.6	374.9	OK
ML1-1.012	ML1-Basin	180 minute 5 year Winter I+20%	17.410	15.908	-0.101	0.000	0.20	348.660	0.8	42.8	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML1

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	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	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML1-1.000	ML1-01	15 minute 30 year Winter I+40%	22.427	21.103	-0.124	0.000	0.62	0.193	1.3	52.4	OK
ML1-1.001	ML1-02	15 minute 30 year Winter I+40%	22.657	20.870	0.009	0.000	0.99	1.991	1.4	84.5	SURCHARGED
ML1-2.000	ML1-03	15 minute 30 year Winter I+40%	22.465	21.289	0.024	0.000	0.81	0.276	1.1	56.8	SURCHARGED
ML1-2.001	ML1-04	15 minute 30 year Winter I+40%	22.630	20.961	0.146	0.000	1.15	4.154	1.2	123.6	SURCHARGED
ML1-2.002	ML1-05	15 minute 30 year Winter I+40%	22.545	20.563	0.068	0.000	0.94	6.790	1.1	106.1	SURCHARGED
ML1-1.002	ML1-06	15 minute 30 year Winter I+40%	22.640	20.454	0.079	0.000	1.09	6.175	1.6	173.0	SURCHARGED
ML1-1.003	ML1-07	15 minute 30 year Winter I+40%	22.485	20.253	0.065	0.000	0.98	2.718	1.8	175.8	SURCHARGED
ML1-3.000	ML1-08	15 minute 30 year Winter I+40%	21.671	20.271	-0.200	0.000	0.03	0.006	1.5	3.7	OK
ML1-1.004	ML1-09	15 minute 30 year Winter I+40%	21.850	19.886	0.111	0.000	1.16	4.147	1.7	185.3	SURCHARGED
ML1-1.005	ML1-10	15 minute 30 year Winter I+40%	21.927	19.687	0.078	0.000	0.91	2.198	2.0	178.1	SURCHARGED
ML1-4.000	ML1-11	15 minute 30 year Winter I+40%	21.802	21.774	-0.066	0.000	0.22	0.000	0.8	28.8	FLOOD RISK
ML1-1.006	ML1-12	15 minute 30 year Winter I+40%	21.302	19.151	0.214	0.000	0.96	5.090	2.0	189.8	SURCHARGED
ML1-5.000	ML1-13	15 minute 30 year Winter I+40%	21.382	21.324	-0.058	0.000	0.27	0.000	0.8	35.8	FLOOD RISK
ML1-1.007	ML1-14	15 minute 30 year Winter I+40%	20.706	18.539	0.313	0.000	1.05	6.267	2.0	208.1	SURCHARGED
ML1-6.000	ML1-15	15 minute 30 year Winter I+40%	20.781	20.719	-0.062	0.000	0.24	0.000	1.0	38.6	FLOOD RISK
ML1-1.008	ML1-16	15 minute 30 year Winter I+40%	19.612	17.738	0.324	0.000	0.81	6.811	1.8	227.4	SURCHARGED
ML1-7.000	ML1-17	15 minute 30 year Winter I+40%	19.667	19.609	-0.059	0.000	0.27	0.000	1.3	52.0	FLOOD RISK
ML1-1.009	ML1-18	15 minute 30 year Winter I+40%	17.980	17.386	0.606	0.000	1.64	13.351	1.6	256.8	SURCHARGED
ML1-8.000	ML1-19	15 minute 30 year Winter I+40%	21.444	21.279	-0.116	0.000	0.16	0.000	0.4	50.4	FLOOD RISK
ML1-8.001	ML1-20	15 minute 30 year Winter I+40%	20.268	20.197	-0.054	0.000	0.41	1.148	0.4	105.8	FLOOD RISK
ML1-8.002	ML1-21	15 minute 30 year Winter I+40%	19.299	19.236	-0.047	0.000	0.49	1.952	0.5	148.4	FLOOD RISK
ML1-8.003	ML1-22	15 minute 30 year Winter I+40%	18.227	18.165	-0.045	0.000	0.54	1.449	0.5	174.6	FLOOD RISK
ML1-1.010	ML1-23	15 minute 30 year Winter I+40%	17.605	17.229	0.439	0.000	1.17	4.152	1.9	403.0	SURCHARGED
ML1-9.000	ML1-24	15 minute 30 year Winter I+40%	22.700	21.527	0.027	0.000	0.70	0.214	1.0	24.6	SURCHARGED
ML1-9.001	ML1-25	15 minute 30 year Winter I+40%	22.371	21.375	0.182	0.000	0.76	2.056	1.4	71.4	SURCHARGED
ML1-10.000	ML1-26	15 minute 30 year Winter I+40%	22.001	21.594	-0.084	0.000	0.71	0.038	2.9	74.7	OK
ML1-9.002	ML1-27	15 minute 30 year Winter I+40%	21.875	21.069	0.385	0.000	1.47	4.290	2.1	149.6	SURCHARGED
ML1-11.000	ML1-28	15 minute 30 year Winter I+40%	21.682	20.257	-0.225	0.000	0.00	0.000	0.0	0.0	OK
ML1-9.003	ML1-29	15 minute 30 year Winter I+40%	21.484	20.258	-0.096	0.000	0.88	0.654	2.0	172.3	OK
ML1-9.004	ML1-30	15 minute 30 year Winter I+40%	20.495	19.425	0.055	0.000	1.03	2.324	1.9	188.8	SURCHARGED
ML1-9.005	ML1-31	15 minute 30 year Winter I+40%	19.529	18.317	-0.087	0.000	0.93	1.223	2.3	202.8	OK
ML1-9.006	ML1-32	15 minute 30 year Winter I+40%	18.292	17.233	0.061	0.000	0.62	2.361	2.9	207.8	SURCHARGED
ML1-1.011	ML1-33	15 minute 30 year Winter I+40%	17.474	16.951	0.286	0.000	1.70	8.034	2.4	671.9	SURCHARGED
ML1-1.012	ML1-Basin	180 minute 30 year Winter I+40%	17.410	16.366	0.357	0.000	0.21	785.595	0.8	43.0	SURCHARGED

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML1

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 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 Catchment
FEH Rainfall Version 2013 Cv (Summer) 0.750
Site Location GB 610500 313350 TG 10500 13350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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) 5, 30, 100
Climate Change (%) 20, 40, 45

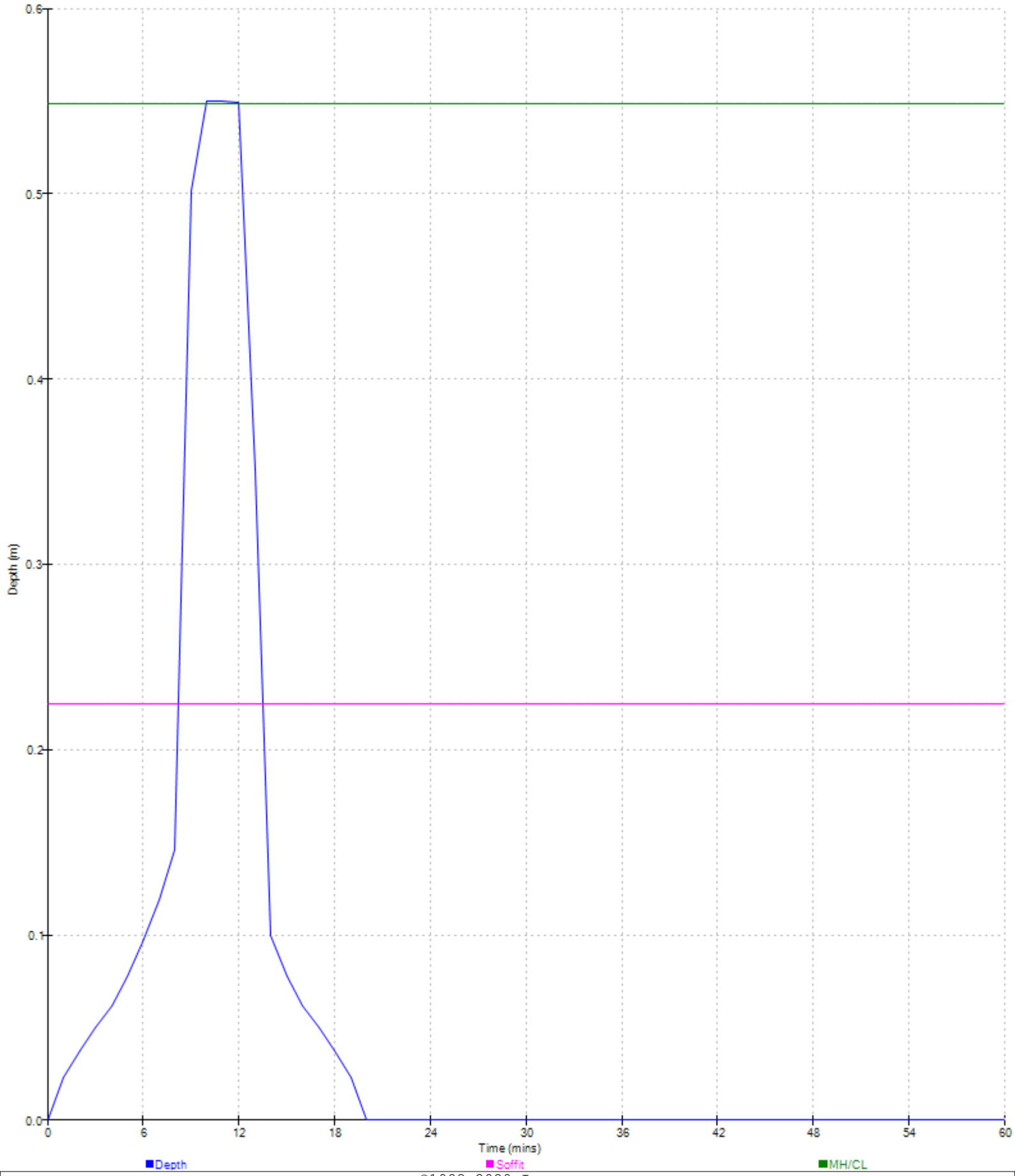
PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML1-1.000	ML1-01	15 minute 100 year Winter I+45%	22.427	21.885	0.658	0.000	0.78	1.077	1.3	66.1	SURCHARGED
ML1-1.001	ML1-02	15 minute 100 year Winter I+45%	22.657	21.781	0.920	0.000	1.23	5.292	1.6	104.9	SURCHARGED
ML1-2.000	ML1-03	15 minute 100 year Winter I+45%	22.465	22.127	0.862	0.000	1.06	1.002	1.1	74.4	SURCHARGED
ML1-2.001	ML1-04	15 minute 100 year Winter I+45%	22.630	21.964	1.149	0.000	1.50	7.063	1.6	160.5	SURCHARGED
ML1-2.002	ML1-05	15 minute 100 year Winter I+45%	22.545	21.727	1.232	0.000	1.23	10.172	1.3	139.3	SURCHARGED
ML1-1.002	ML1-06	15 minute 100 year Winter I+45%	22.640	21.618	1.243	0.000	1.35	11.141	1.9	214.0	SURCHARGED
ML1-1.003	ML1-07	15 minute 100 year Winter I+45%	22.485	21.400	1.212	0.000	1.12	4.966	1.8	200.3	SURCHARGED
ML1-3.000	ML1-08	15 minute 100 year Winter I+45%	21.671	20.951	0.480	0.000	0.04	0.198	1.7	5.0	SURCHARGED
ML1-1.004	ML1-09	15 minute 100 year Winter I+45%	21.850	20.949	1.174	0.000	1.28	7.536	1.8	203.7	SURCHARGED
ML1-1.005	ML1-10	15 minute 100 year Winter I+45%	21.927	20.684	1.075	0.000	1.00	4.061	2.0	197.0	SURCHARGED
ML1-4.000	ML1-11	15 minute 100 year Winter I+45%	21.802	21.784	-0.056	0.000	0.29	0.000	0.9	38.9	FLOOD RISK
ML1-1.006	ML1-12	15 minute 100 year Winter I+45%	21.302	19.998	1.062	0.000	1.07	9.513	2.0	210.6	SURCHARGED
ML1-5.000	ML1-13	15 minute 100 year Winter I+45%	21.382	21.335	-0.047	0.000	0.37	0.000	0.9	48.3	FLOOD RISK
ML1-1.007	ML1-14	15 minute 100 year Winter I+45%	20.706	19.217	0.991	0.000	1.14	9.756	2.1	225.6	SURCHARGED
ML1-6.000	ML1-15	15 minute 100 year Winter I+45%	20.781	20.729	-0.052	0.000	0.33	0.000	1.1	52.0	FLOOD RISK
ML1-1.008	ML1-16	15 minute 100 year Winter I+45%	19.612	18.196	0.782	0.000	0.89	10.727	1.9	251.5	SURCHARGED
ML1-7.000	ML1-17	15 minute 100 year Winter I+45%	19.667	19.620	-0.048	0.000	0.36	0.000	1.4	70.2	FLOOD RISK
ML1-1.009	ML1-18	15 minute 100 year Winter I+45%	17.980	17.762	0.982	0.000	1.77	14.121	1.7	276.8	FLOOD RISK
ML1-8.000	ML1-19	15 minute 100 year Winter I+45%	21.444	21.295	-0.100	0.000	0.21	0.000	0.5	68.1	FLOOD RISK
ML1-8.001	ML1-20	15 minute 100 year Winter I+45%	20.268	20.217	-0.034	0.000	0.55	1.511	0.5	142.5	FLOOD RISK
ML1-8.002	ML1-21	15 minute 100 year Winter I+45%	19.299	19.259	-0.024	0.000	0.66	2.573	0.6	200.9	FLOOD RISK
ML1-8.003	ML1-22	15 minute 100 year Winter I+45%	18.227	18.189	-0.021	0.000	0.73	1.910	0.6	235.3	FLOOD RISK
ML1-1.010	ML1-23	15 minute 100 year Winter I+45%	17.605	17.546	0.756	0.000	1.46	5.659	2.3	499.4	FLOOD RISK
ML1-9.000	ML1-24	15 minute 100 year Winter I+45%	22.700	22.564	1.064	0.000	0.91	1.112	1.0	32.1	FLOOD RISK
ML1-9.001	ML1-25	15 minute 100 year Winter I+45%	22.371	22.295	1.102	0.000	1.02	3.084	1.4	95.9	FLOOD RISK
ML1-10.000	ML1-26	15 minute 100 year Winter I+45%	22.001	22.006	0.328	4.650	0.80	4.789	2.9	84.9	FLOOD
ML1-9.002	ML1-27	15 minute 100 year Winter I+45%	21.875	21.738	1.054	0.000	1.73	5.427	2.6	176.2	FLOOD RISK
ML1-11.000	ML1-28	15 minute 100 year Winter I+45%	21.682	20.848	0.366	0.000	0.02	0.166	0.1	0.9	SURCHARGED
ML1-9.003	ML1-29	15 minute 100 year Winter I+45%	21.484	20.849	0.495	0.000	1.02	2.751	2.0	198.4	SURCHARGED
ML1-9.004	ML1-30	15 minute 100 year Winter I+45%	20.495	19.911	0.541	0.000	1.13	6.742	1.9	208.0	SURCHARGED
ML1-9.005	ML1-31	15 minute 100 year Winter I+45%	19.529	18.689	0.285	0.000	1.01	4.945	2.3	220.9	SURCHARGED
ML1-9.006	ML1-32	15 minute 100 year Winter I+45%	18.292	17.437	0.265	0.000	0.69	4.063	2.9	231.6	SURCHARGED
ML1-1.011	ML1-33	15 minute 100 year Winter I+45%	17.474	17.146	0.481	0.000	2.03	8.499	2.8	802.7	SURCHARGED
ML1-1.012	ML1-Basin	240 minute 100 year Winter I+45%	17.410	16.738	0.728	0.000	0.21	1198.140	0.8	43.0	SURCHARGED

Summary of Results for 15 minute 100 year Winter (SWS-ML1)

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML1-1.000	ML1-01	22.427	21.809	0.582	0.000	0.78	0.992	1.3	66.2	SURCHARGED
ML1-1.001	ML1-02	22.657	21.761	0.900	0.000	1.23	5.269	1.6	104.9	SURCHARGED
ML1-2.000	ML1-03	22.465	22.088	0.823	0.000	1.06	0.968	1.1	74.5	SURCHARGED
ML1-2.001	ML1-04	22.630	21.926	1.111	0.000	1.50	7.030	1.6	160.6	SURCHARGED
ML1-2.002	ML1-05	22.545	21.708	1.213	0.000	1.24	10.156	1.3	139.6	SURCHARGED
ML1-1.002	ML1-06	22.640	21.598	1.223	0.000	1.35	11.105	1.9	214.0	SURCHARGED
ML1-1.003	ML1-07	22.485	21.366	1.178	0.000	1.12	4.907	1.8	200.1	SURCHARGED
ML1-3.000	ML1-08	21.671	20.916	0.445	0.000	0.04	0.188	1.7	5.0	SURCHARGED
ML1-1.004	ML1-09	21.850	20.914	1.139	0.000	1.27	7.474	1.8	202.8	SURCHARGED
ML1-1.005	ML1-10	21.927	20.649	1.040	0.000	1.00	3.999	2.0	196.1	SURCHARGED
ML1-4.000	ML1-11	21.802	21.784	-0.056	0.000	0.29	0.000	0.9	38.9	FLOOD RISK
ML1-1.006	ML1-12	21.302	19.979	1.042	0.000	1.06	9.474	2.0	209.5	SURCHARGED
ML1-5.000	ML1-13	21.382	21.335	-0.047	0.000	0.37	0.000	0.9	48.3	FLOOD RISK
ML1-1.007	ML1-14	20.706	19.196	0.970	0.000	1.13	9.715	2.1	224.6	SURCHARGED
ML1-6.000	ML1-15	20.781	20.729	-0.052	0.000	0.33	0.000	1.1	52.0	FLOOD RISK
ML1-1.008	ML1-16	19.612	18.173	0.759	0.000	0.89	10.676	1.9	250.3	SURCHARGED
ML1-7.000	ML1-17	19.667	19.620	-0.048	0.000	0.36	0.000	1.4	70.2	FLOOD RISK
ML1-1.009	ML1-18	17.980	17.740	0.960	0.000	1.77	14.112	1.8	276.5	FLOOD RISK
ML1-8.000	ML1-19	21.444	21.295	-0.100	0.000	0.21	0.000	0.5	68.1	FLOOD RISK
ML1-8.001	ML1-20	20.268	20.217	-0.034	0.000	0.55	1.511	0.5	142.5	FLOOD RISK
ML1-8.002	ML1-21	19.299	19.259	-0.024	0.000	0.66	2.573	0.6	200.9	FLOOD RISK
ML1-8.003	ML1-22	18.227	18.189	-0.021	0.000	0.73	1.910	0.6	235.5	FLOOD RISK
ML1-1.010	ML1-23	17.605	17.525	0.735	0.000	1.44	5.368	2.3	495.3	FLOOD RISK
ML1-9.000	ML1-24	22.700	22.544	1.044	0.000	0.91	1.095	1.0	32.0	FLOOD RISK
ML1-9.001	ML1-25	22.371	22.280	1.087	0.000	1.02	3.072	1.4	96.1	FLOOD RISK
ML1-10.000	ML1-26	22.001	22.003	0.325	5.026	0.81	0.157	2.9	85.3	FLOOD
ML1-9.002	ML1-27	21.875	21.728	1.044	0.000	1.72	5.417	2.5	175.9	FLOOD RISK
ML1-11.000	ML1-28	21.682	20.835	0.353	0.000	0.02	0.162	0.1	0.9	SURCHARGED
ML1-9.003	ML1-29	21.484	20.837	0.483	0.000	1.01	2.741	2.0	197.9	SURCHARGED
ML1-9.004	ML1-30	20.495	19.896	0.526	0.000	1.13	6.608	1.9	208.1	SURCHARGED
ML1-9.005	ML1-31	19.529	18.678	0.274	0.000	1.01	4.834	2.3	220.6	SURCHARGED
ML1-9.006	ML1-32	18.292	17.429	0.257	0.000	0.69	4.002	2.9	230.7	SURCHARGED
ML1-1.011	ML1-33	17.474	17.143	0.478	0.000	2.03	8.492	2.8	800.4	SURCHARGED
ML1-1.012	ML1-Basin	17.410	16.197	0.188	0.000	0.21	615.245	0.8	43.0	SURCHARGED

Graphs for Pipe ML1-10.000 US/MH ML1-26 (SWS-ML1)
15 minute 100 year Winter
Status: FLOOD



Catchment 2 Basin 2 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:10 no flooding check
All pipes pass for 1:10
1:30 no flooding check
All pipes pass for 1:30
1:100 flooding check
The assessment* identifies that flooding resulting from 100 +CC storms will be cointained within the scheme extents.

Attenuation

100 + CC Peak Water Level: 16.626m
Cover level: 17.600m
Freeboard: achieved

*Assessment using FloodFlow has been undertaken for the 100yr Critical storms identified from the Microdrainage modelling. This analysis undertakes a more detailed assessment of flooding which considers the proposed topography.

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-ML02

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 610500 313350 TG 10500 13350	PIMP (%)	100
C (1km)	-0.024	Add Flow / Climate Change (%)	0
D1 (1km)	0.305	Minimum Backdrop Height (m)	0.200
D2 (1km)	0.305	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.270	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.313	Min Vel for Auto Design only (m/s)	1.00
F (1km)	2.473	Min Slope for Optimisation (1:X)	200
Maximum Rainfall (mm/hr)	250		

Designed with Level Soffits

Time Area Diagram for SWS-ML02 at outfall ML2-** (pipe ML2-4.007)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	1.085	4-8	1.506	8-12	1.742	12-16	0.786	16-20	0.296	20-24	0.097	24-28	0.187

Total Area Contributing (ha) = 5.698

Total Pipe Volume (m³) = 1477.531

Time Area Diagram at outfall ML2-97 (pipe ML2-24.002)

Time (mins)	Area (ha)
0-4	0.000

Total Area Contributing (ha) = 0.000

Total Pipe Volume (m³) = 9.537

Network Design Table for SWS-ML02

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML2-4.000	45.149	1.863	24.2	0.051	5.00	0.0		0.015	1:5	-1	Pipe/Conduit	
ML2-4.001	100.337	2.808	35.7	0.000	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-4.002	68.016	0.843	80.7	0.000	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-5.000	84.306	0.649	130.0	0.000	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-6.000	54.031	0.538	100.4	0.098	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-6.001	81.316	0.405	200.8	0.116	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-6.002	84.694	0.386	219.4	0.123	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-7.000	100.341	2.667	37.6	0.176	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-7.001	68.393	0.819	83.5	0.098	0.00	0.0		0.050	2V	-3	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML2-4.000	64.77	5.21	23.058	0.051	0.0	0.0	0.0	3.50	1402.1	8.9
ML2-4.001	58.19	6.08	19.970	0.051	0.0	0.0	0.0	1.92	76.5	8.9
ML2-4.002	52.94	6.97	17.162	0.051	0.0	0.0	0.0	1.28	50.8	8.9
ML2-5.000	56.19	6.40	16.968	0.000	0.0	0.0	0.0	1.01	40.0	0.0
ML2-6.000	53.65	6.84	19.138	0.098	0.0	0.0	0.0	0.49	242.6	14.3
ML2-6.001	39.18	10.75	18.600	0.215	0.0	0.0	0.0	0.35	171.6	22.8
ML2-6.002	31.07	15.01	18.195	0.338	0.0	0.0	0.0	0.33	164.1	28.4
ML2-7.000	52.32	7.09	21.295	0.176	0.0	0.0	0.0	0.80	396.4	25.0
ML2-7.001	43.62	9.21	18.628	0.274	0.0	0.0	0.0	0.54	266.0	32.4

Network Design Table for SWS-ML02

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML2-4.003	21.362	0.060	356.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML2-8.000	81.830	0.413	198.1	0.113	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-8.001	93.701	0.400	234.3	0.119	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-9.000	93.646	1.160	80.7	0.000	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-10.000	56.947	1.794	31.7	0.103	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-10.001	38.877	1.241	31.3	0.085	0.00	0.0		0.015	1:5	-1	Pipe/Conduit	
ML2-10.002	79.998	2.729	29.3	0.109	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-10.003	42.758	0.865	49.4	0.058	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-10.004	57.556	1.156	49.8	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-11.000	57.652	0.492	117.2	0.079	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.000	95.941	0.243	394.8	0.131	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.001	95.296	0.636	149.8	0.124	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.002	76.078	0.988	77.0	0.100	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.003	100.253	1.522	65.9	0.149	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.004	97.878	2.307	42.4	0.146	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.005	97.882	2.500	39.2	0.092	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-12.006	25.613	0.984	26.0	0.017	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-13.000	99.424	0.765	130.0	0.034	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-13.001	92.913	0.700	132.7	0.041	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-13.002	100.282	0.996	100.7	0.051	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-13.003	100.074	1.844	54.3	0.044	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-13.004	97.869	2.699	36.3	0.029	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-13.005	92.852	3.462	26.8	0.092	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML2-13.006	18.321	0.084	218.1	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML2-14.000	92.702	0.773	120.0	0.000	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-14.001	79.141	0.892	88.7	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML2-15.000	98.255	0.819	120.0	0.008	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-15.001	98.579	0.782	126.1	0.012	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-15.002	71.544	0.550	130.1	0.010	0.00	0.0	1.500		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML2-4.003	30.64	15.31	16.319	0.663	0.0	0.0	0.0	1.18	255.7	55.0
ML2-8.000	44.64	8.91	19.282	0.113	0.0	0.0	0.0	0.35	172.7	13.7
ML2-8.001	32.97	13.78	18.869	0.232	0.0	0.0	0.0	0.32	158.8	20.7
ML2-9.000	57.29	6.22	17.644	0.000	0.0	0.0	0.0	1.28	50.8	0.0
ML2-10.000	58.15	6.09	25.590	0.103	0.0	0.0	0.0	0.87	431.5	16.2
ML2-10.001	56.80	6.30	23.796	0.188	0.0	0.0	0.0	3.08	1233.2	28.9
ML2-10.002	49.09	7.77	22.555	0.297	0.0	0.0	0.0	0.91	449.0	39.5
ML2-10.003	45.06	8.79	19.826	0.355	0.0	0.0	0.0	0.70	345.8	43.3
ML2-10.004	43.62	9.21	17.640	0.355	0.0	0.0	0.0	2.28	251.3	43.3
ML2-11.000	52.17	7.12	18.961	0.079	0.0	0.0	0.0	0.45	224.6	11.2
ML2-12.000	37.45	11.47	32.534	0.131	0.0	0.0	0.0	0.25	122.4	13.3
ML2-12.001	30.48	15.43	32.291	0.255	0.0	0.0	0.0	0.40	198.6	21.0
ML2-12.002	27.71	17.69	31.655	0.355	0.0	0.0	0.0	0.56	277.1	26.6
ML2-12.003	25.05	20.45	30.667	0.504	0.0	0.0	0.0	0.61	299.5	34.2
ML2-12.004	23.36	22.62	29.145	0.650	0.0	0.0	0.0	0.75	373.2	41.1
ML2-12.005	21.98	24.70	26.838	0.742	0.0	0.0	0.0	0.78	388.5	44.2
ML2-12.006	21.71	25.14	24.338	0.759	0.0	0.0	0.0	0.96	476.5	44.6
ML2-13.000	54.71	6.65	31.918	0.034	0.0	0.0	0.0	1.01	40.0	5.0
ML2-13.001	47.28	8.20	31.153	0.074	0.0	0.0	0.0	1.00	39.6	9.5
ML2-13.002	42.19	9.66	30.453	0.125	0.0	0.0	0.0	1.14	45.5	14.3
ML2-13.003	39.22	10.73	29.457	0.170	0.0	0.0	0.0	1.56	62.0	18.0
ML2-13.004	37.19	11.59	27.613	0.199	0.0	0.0	0.0	1.91	75.9	20.0
ML2-13.005	35.95	12.16	24.839	0.291	0.0	0.0	0.0	2.68	189.6	28.3
ML2-13.006	35.45	12.41	21.302	0.291	0.0	0.0	0.0	1.22	135.1	28.3
ML2-14.000	55.72	6.48	31.063	0.000	0.0	0.0	0.0	1.05	41.6	0.0
ML2-14.001	50.92	7.37	30.215	0.000	0.0	0.0	0.0	1.47	104.1	0.0
ML2-15.000	55.20	6.56	31.645	0.008	0.0	0.0	0.0	1.05	41.6	1.2
ML2-15.001	47.40	8.17	30.826	0.019	0.0	0.0	0.0	1.02	40.6	2.5
ML2-15.002	43.14	9.36	30.044	0.030	0.0	0.0	0.0	1.01	40.0	3.4

Network Design Table for SWS-ML02

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML2-15.003	12.319	0.096	128.3	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML2-14.002	98.702	1.670	59.1	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML2-14.003	98.798	2.150	46.0	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML2-14.004	98.131	2.672	36.7	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML2-14.005	25.361	1.538	16.5	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-12.007	44.326	0.523	84.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-12.008	70.504	2.161	32.6	0.015	0.00	0.0	1.500		o	450	Pipe/Conduit	
ML2-12.009	41.713	0.866	48.2	0.006	0.00	0.0	1.500		o	450	Pipe/Conduit	
ML2-12.010	55.079	0.482	114.3	0.008	0.00	0.0	1.500		o	450	Pipe/Conduit	
ML2-12.011	7.005	0.852	8.2	0.000	0.00	0.0	1.500		o	450	Pipe/Conduit	
ML2-4.004	14.365	0.041	350.0	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML2-16.000	94.488	0.267	353.9	0.138	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-16.001	94.529	0.750	126.0	0.145	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-16.002	101.377	1.144	88.6	0.165	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-16.003	55.907	1.032	54.2	0.092	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-16.004	68.245	1.540	44.3	0.101	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-16.005	67.400	1.037	65.0	0.103	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-16.006	82.584	1.884	43.8	0.049	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML2-17.000	28.950	0.447	64.8	0.000	5.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-17.001	64.513	1.390	46.4	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-17.002	27.166	0.440	61.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-17.003	24.226	7.340	3.3	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-18.000	5.267	6.586	0.8	0.000	5.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-18.001	3.897	0.297	13.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-19.000	93.025	0.741	125.5	0.000	5.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-19.001	99.863	1.319	75.7	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-19.002	57.889	1.011	57.3	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-18.002	67.929	1.387	49.0	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-18.003	33.405	0.600	55.7	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML2-15.003	42.58	9.53	29.494	0.030	0.0	0.0	0.0	1.15	45.8	3.4
ML2-14.002	39.96	10.45	29.323	0.030	0.0	0.0	0.0	1.81	127.6	3.4
ML2-14.003	37.96	11.25	27.653	0.030	0.0	0.0	0.0	2.05	144.8	3.4
ML2-14.004	36.37	11.96	25.503	0.030	0.0	0.0	0.0	2.29	162.0	3.4
ML2-14.005	36.14	12.07	22.756	0.030	0.0	0.0	0.0	3.96	437.1	3.4
ML2-12.007	21.51	25.47	21.143	1.079	0.0	0.0	0.0	2.21	351.4	62.8
ML2-12.008	21.29	25.85	20.620	1.094	0.0	0.0	0.0	3.16	503.1	63.1
ML2-12.009	21.14	26.11	18.459	1.099	0.0	0.0	0.0	2.60	413.9	63.1
ML2-12.010	20.84	26.66	17.593	1.107	0.0	0.0	0.0	1.69	268.4	63.1
ML2-12.011	20.83	26.68	17.111	1.107	0.0	0.0	0.0	6.31	1002.9	63.1
ML2-4.004	20.75	26.83	16.259	2.437	0.0	0.0	0.0	1.58	845.2	136.9
ML2-16.000	38.47	11.03	32.090	0.138	0.0	0.0	0.0	0.26	129.2	14.4
ML2-16.001	31.62	14.63	31.823	0.283	0.0	0.0	0.0	0.44	216.6	24.3
ML2-16.002	27.51	17.87	31.073	0.448	0.0	0.0	0.0	0.52	258.3	33.4
ML2-16.003	26.11	19.27	29.929	0.540	0.0	0.0	0.0	0.67	330.3	38.2
ML2-16.004	24.75	20.81	28.897	0.640	0.0	0.0	0.0	0.74	365.2	42.9
ML2-16.005	23.33	22.65	27.357	0.744	0.0	0.0	0.0	0.61	301.6	47.0
ML2-16.006	22.09	24.51	26.320	0.792	0.0	0.0	0.0	0.74	367.2	47.4
ML2-17.000	64.49	5.25	35.077	0.000	0.0	0.0	0.0	1.96	138.3	0.0
ML2-17.001	60.80	5.71	34.630	0.000	0.0	0.0	0.0	2.31	163.6	0.0
ML2-17.002	59.18	5.94	33.240	0.000	0.0	0.0	0.0	2.00	141.7	0.0
ML2-17.003	58.86	5.98	32.800	0.000	0.0	0.0	0.0	8.71	615.9	0.0
ML2-18.000	66.64	5.00	34.330	0.000	0.0	0.0	0.0	17.71	1252.1	0.0
ML2-18.001	66.50	5.02	27.744	0.000	0.0	0.0	0.0	4.36	308.4	0.0
ML2-19.000	58.19	6.08	30.443	0.000	0.0	0.0	0.0	1.43	158.0	0.0
ML2-19.001	52.85	6.99	29.702	0.000	0.0	0.0	0.0	1.84	203.7	0.0
ML2-19.002	50.59	7.44	28.383	0.000	0.0	0.0	0.0	2.12	234.3	0.0
ML2-18.002	48.38	7.93	27.372	0.000	0.0	0.0	0.0	2.29	253.4	0.0
ML2-18.003	47.31	8.19	25.985	0.000	0.0	0.0	0.0	2.15	237.6	0.0

Network Design Table for SWS-ML02

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML2-17.004	34.321	0.601	57.1	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-17.005	82.430	1.723	47.8	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-16.007	47.066	1.211	38.9	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML2-16.008	83.416	2.786	29.9	0.015	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-16.009	98.555	2.321	42.5	0.021	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML2-20.000	95.433	1.382	69.1	0.019	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML2-4.005	57.975	0.118	491.3	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML2-21.000	19.978	0.101	197.8	0.031	5.00	0.0	0.600		o	250	Pipe/Conduit	
ML2-21.001	21.684	0.108	200.8	0.029	0.00	0.0	0.600		o	250	Pipe/Conduit	
ML2-21.002	20.959	0.105	199.6	0.032	0.00	0.0	0.600		o	250	Pipe/Conduit	
ML2-21.003	31.973	0.161	198.6	0.030	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-21.004	27.270	0.137	199.1	0.047	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-21.005	27.969	0.141	198.4	0.040	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-21.006	25.943	0.130	199.6	0.041	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-21.007	27.920	0.139	200.9	0.037	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-21.008	25.215	0.128	197.0	0.041	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-21.009	27.952	0.141	198.2	0.037	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.010	25.485	0.131	194.5	0.041	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.011	28.082	0.141	199.2	0.037	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.012	25.503	0.128	199.2	0.041	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.013	28.039	0.141	198.9	0.040	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.014	25.569	0.128	199.8	0.038	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.015	27.983	0.141	198.5	0.037	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.016	25.460	0.128	198.9	0.041	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.017	23.992	0.120	199.9	0.037	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.018	10.727	0.084	127.7	0.034	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.019	12.166	0.030	400.0	0.016	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-22.000	20.000	0.097	206.2	0.023	5.00	0.0	0.600		o	250	Pipe/Conduit	
ML2-22.001	21.846	0.110	198.6	0.020	0.00	0.0	0.600		o	250	Pipe/Conduit	
ML2-22.002	21.182	0.104	203.7	0.023	0.00	0.0	0.600		o	250	Pipe/Conduit	
ML2-22.003	31.982	0.161	198.6	0.022	0.00	0.0	0.600		o	250	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML2-17.004	46.26	8.46	25.385	0.000	0.0	0.0	0.0	2.12	234.6	0.0
ML2-17.005	44.14	9.05	24.784	0.000	0.0	0.0	0.0	2.32	256.4	0.0
ML2-16.007	21.92	24.78	23.061	0.792	0.0	0.0	0.0	2.91	321.9	47.4
ML2-16.008	21.64	25.25	21.850	0.808	0.0	0.0	0.0	2.94	324.2	47.4
ML2-16.009	21.25	25.92	19.064	0.829	0.0	0.0	0.0	2.46	272.1	47.7
ML2-20.000	57.75	6.15	18.275	0.019	0.0	0.0	0.0	1.38	55.0	2.9
ML2-4.005	20.37	27.55	16.218	3.284	0.0	0.0	0.0	1.33	712.4	181.1
ML2-21.000	63.74	5.34	19.445	0.031	0.0	0.0	0.0	0.99	48.7	5.4
ML2-21.001	60.86	5.70	19.344	0.060	0.0	0.0	0.0	0.98	48.3	9.9
ML2-21.002	58.36	6.06	19.236	0.092	0.0	0.0	0.0	0.99	48.4	14.6
ML2-21.003	55.62	6.49	19.031	0.122	0.0	0.0	0.0	1.23	118.1	18.4
ML2-21.004	53.51	6.86	18.870	0.169	0.0	0.0	0.0	1.23	117.9	24.4
ML2-21.005	51.55	7.24	18.733	0.209	0.0	0.0	0.0	1.23	118.1	29.2
ML2-21.006	49.87	7.60	18.592	0.250	0.0	0.0	0.0	1.22	117.8	33.7
ML2-21.007	48.20	7.98	18.462	0.287	0.0	0.0	0.0	1.22	117.4	37.4
ML2-21.008	46.82	8.32	18.323	0.327	0.0	0.0	0.0	1.23	118.5	41.5
ML2-21.009	45.59	8.64	18.095	0.364	0.0	0.0	0.0	1.44	229.1	45.0
ML2-21.010	44.55	8.93	17.954	0.405	0.0	0.0	0.0	1.45	231.3	48.8
ML2-21.011	43.46	9.26	17.823	0.442	0.0	0.0	0.0	1.44	228.5	52.0
ML2-21.012	42.52	9.55	17.682	0.483	0.0	0.0	0.0	1.44	228.5	55.6
ML2-21.013	41.54	9.88	17.554	0.523	0.0	0.0	0.0	1.44	228.7	58.8
ML2-21.014	40.69	10.18	17.413	0.561	0.0	0.0	0.0	1.43	228.2	61.8
ML2-21.015	39.82	10.50	17.285	0.598	0.0	0.0	0.0	1.44	228.9	64.5
ML2-21.016	39.06	10.80	17.144	0.639	0.0	0.0	0.0	1.44	228.7	67.6
ML2-21.017	38.37	11.07	17.016	0.676	0.0	0.0	0.0	1.43	228.1	70.2
ML2-21.018	38.13	11.17	16.896	0.710	0.0	0.0	0.0	1.80	285.9	73.4
ML2-21.019	37.67	11.37	16.812	0.726	0.0	0.0	0.0	1.01	160.7	74.1
ML2-22.000	63.68	5.34	19.750	0.023	0.0	0.0	0.0	0.97	47.6	3.9
ML2-22.001	60.80	5.71	19.653	0.043	0.0	0.0	0.0	0.99	48.6	7.1
ML2-22.002	58.26	6.07	19.543	0.066	0.0	0.0	0.0	0.98	47.9	10.5
ML2-22.003	54.92	6.61	19.439	0.088	0.0	0.0	0.0	0.99	48.6	13.1

Network Design Table for SWS-ML02

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML2-22.004	27.741	0.140	198.2	0.034	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.005	28.000	0.142	197.2	0.029	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.006	25.842	0.125	206.7	0.029	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.007	28.000	0.142	197.2	0.027	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.008	25.965	0.129	201.3	0.029	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.009	28.000	0.136	205.9	0.027	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.010	27.385	0.139	197.0	0.030	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.011	28.000	0.143	195.8	0.029	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.012	24.147	0.118	204.6	0.029	0.00	0.0	0.600		o	350	Pipe/Conduit	
ML2-22.013	28.000	0.145	193.1	0.025	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-22.014	25.601	0.127	201.6	0.029	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-22.015	28.000	0.137	204.4	0.027	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-22.016	25.891	0.128	202.3	0.030	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-22.017	23.970	0.119	201.4	0.027	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-22.018	11.306	0.426	26.5	0.025	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.020	13.778	0.046	299.5	0.012	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML2-21.021	56.034	0.144	390.0	0.010	0.00	0.0	1.500		o	525	Pipe/Conduit	
ML2-23.000	53.634	0.273	196.5	0.070	5.00	0.0		0.015	5 \/	150	1:5 V	
ML2-23.001	15.510	0.080	193.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML2-21.022	89.322	0.229	390.0	0.018	0.00	0.0	1.500		o	525	Pipe/Conduit	
ML2-21.023	109.810	0.263	417.5	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML2-4.006	31.263	0.400	78.2	0.140	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML2-4.007	25.068	0.075	334.2	0.923	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML2-24.000	6.594	0.165	40.0	0.000	5.00	0.0		0.015	g	-4	Pipe/Conduit	
ML2-24.001	94.297	0.393	240.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML2-24.002	26.213	0.130	201.6	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML2-22.004	52.84	6.99	19.178	0.122	0.0	0.0	0.0	1.23	118.2	17.4
ML2-22.005	50.94	7.37	19.038	0.151	0.0	0.0	0.0	1.23	118.5	20.8
ML2-22.006	49.29	7.73	18.896	0.180	0.0	0.0	0.0	1.20	115.7	24.0
ML2-22.007	47.67	8.10	18.771	0.207	0.0	0.0	0.0	1.23	118.5	26.7
ML2-22.008	46.27	8.46	18.629	0.236	0.0	0.0	0.0	1.22	117.3	29.6
ML2-22.009	44.86	8.85	18.500	0.263	0.0	0.0	0.0	1.20	115.9	32.0
ML2-22.010	43.59	9.22	18.364	0.293	0.0	0.0	0.0	1.23	118.5	34.6
ML2-22.011	42.39	9.59	18.225	0.322	0.0	0.0	0.0	1.24	118.9	37.0
ML2-22.012	41.40	9.93	18.082	0.351	0.0	0.0	0.0	1.21	116.3	39.3
ML2-22.013	40.50	10.25	17.864	0.376	0.0	0.0	0.0	1.46	232.1	41.3
ML2-22.014	39.70	10.55	17.719	0.405	0.0	0.0	0.0	1.43	227.2	43.6
ML2-22.015	38.86	10.88	17.592	0.432	0.0	0.0	0.0	1.42	225.6	45.5
ML2-22.016	38.13	11.18	17.455	0.462	0.0	0.0	0.0	1.43	226.8	47.7
ML2-22.017	37.48	11.46	17.327	0.489	0.0	0.0	0.0	1.43	227.2	49.7
ML2-22.018	37.37	11.51	17.208	0.514	0.0	0.0	0.0	3.96	629.6	52.0
ML2-21.020	36.97	11.68	16.782	1.252	0.0	0.0	0.0	1.29	279.0	125.4
ML2-21.021	35.06	12.61	16.736	1.263	0.0	0.0	0.0	1.01	217.8	125.4
ML2-23.000	58.27	6.07	19.852	0.070	0.0	0.0	0.0	0.83	93.9	11.0
ML2-23.001	57.12	6.25	18.079	0.070	0.0	0.0	0.0	1.46	231.7	11.0
ML2-21.022	32.46	14.09	16.592	1.350	0.0	0.0	0.0	1.01	217.8	125.4
ML2-21.023	30.01	15.77	16.363	1.350	0.0	0.0	0.0	1.09	235.9	125.4
ML2-4.006	20.29	27.70	16.100	4.775	0.0	0.0	0.0	3.55	2256.0	262.4
ML2-4.007	20.17	27.94	16.100	5.698	0.0	0.0	0.0	1.71	1086.7	311.2
ML2-24.000	66.32	5.04	17.390	0.000	0.0	0.0	0.0	2.79	430.4	0.0
ML2-24.001	55.02	6.59	16.741	0.000	0.0	0.0	0.0	1.01	71.4	0.0
ML2-24.002	52.83	6.99	16.348	0.000	0.0	0.0	0.0	1.10	78.0	0.0

Conduit Sections for SWS-ML02

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-1	1:5	1000	200	11.3		0.526	0.400
-3	2V	4001	200			0.487	0.495
-4	g	1000	210			0.544	0.155

Manhole Schedules for SWS-ML02

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)
ML2-25	23.257	0.199	Open Manhole	10	ML2-4.000	23.058	-1				
ML2-26	21.395	1.425	Open Manhole	1050	ML2-4.001	19.970	225	ML2-4.000	21.195	-1	1200
ML2-27	18.587	1.425	Open Manhole	1500	ML2-4.002	17.162	225	ML2-4.001	17.162	225	
ML2-28	18.393	1.425	Open Manhole	1500	ML2-5.000	16.968	225				
ML2-29	19.338	0.200	Open Manhole	10	ML2-6.000	19.138	-3				
ML2-30	18.800	0.200	Open Manhole	10	ML2-6.001	18.600	-3	ML2-6.000	18.600	-3	
ML2-31	18.395	0.200	Open Manhole	10	ML2-6.002	18.195	-3	ML2-6.001	18.195	-3	
ML2-32	21.495	0.200	Open Manhole	10	ML2-7.000	21.295	-3				
ML2-33	18.828	0.200	Open Manhole	10	ML2-7.001	18.628	-3	ML2-7.000	18.628	-3	
ML2-34	18.009	1.690	Open Manhole	1500	ML2-4.003	16.319	525	ML2-4.002	16.319	225	
								ML2-5.000	16.319	225	
								ML2-6.002	17.809	-3	1165
								ML2-7.001	17.809	-3	1165
ML2-35	19.482	0.200	Open Manhole	10	ML2-8.000	19.282	-3				
ML2-36	19.069	0.200	Open Manhole	10	ML2-8.001	18.869	-3	ML2-8.000	18.869	-3	
ML2-37	19.069	1.425	Open Manhole	1500	ML2-9.000	17.644	225				
ML2-38	25.790	0.200	Open Manhole	10	ML2-10.000	25.590	-3				
ML2-39	23.882	0.086	Open Manhole	10	ML2-10.001	23.796	-1	ML2-10.000	23.796	-3	
ML2-40	22.755	0.200	Open Manhole	10	ML2-10.002	22.555	-3	ML2-10.001	22.555	-1	
ML2-41	20.026	0.200	Open Manhole	10	ML2-10.003	19.826	-3	ML2-10.002	19.826	-3	
ML2-42	19.140	1.500	Open Manhole	1500	ML2-10.004	17.640	375	ML2-10.003	18.961	-3	1146
ML2-43	19.161	0.200	Open Manhole	10	ML2-11.000	18.961	-3				
ML2-44	32.734	0.200	Open Manhole	10	ML2-12.000	32.534	-3				
ML2-45	32.491	0.200	Open Manhole	10	ML2-12.001	32.291	-3	ML2-12.000	32.291	-3	
ML2-46	31.855	0.200	Open Manhole	10	ML2-12.002	31.655	-3	ML2-12.001	31.655	-3	
ML2-47	30.867	0.200	Open Manhole	10	ML2-12.003	30.667	-3	ML2-12.002	30.667	-3	
ML2-48	29.345	0.200	Open Manhole	10	ML2-12.004	29.145	-3	ML2-12.003	29.145	-3	
ML2-49	27.038	0.200	Open Manhole	10	ML2-12.005	26.838	-3	ML2-12.004	26.838	-3	
ML2-50	24.538	0.200	Open Manhole	10	ML2-12.006	24.338	-3	ML2-12.005	24.338	-3	
ML2-51	33.343	1.425	Open Manhole	1050	ML2-13.000	31.918	225				
ML2-52	32.998	1.845	Open Manhole	1200	ML2-13.001	31.153	225	ML2-13.000	31.153	225	
ML2-53	32.251	1.797	Open Manhole	1200	ML2-13.002	30.453	225	ML2-13.001	30.453	225	
ML2-54	30.883	1.425	Open Manhole	1200	ML2-13.003	29.457	225	ML2-13.002	29.457	225	
ML2-55	29.038	1.425	Open Manhole	1200	ML2-13.004	27.613	225	ML2-13.003	27.613	225	
ML2-56	26.339	1.500	Open Manhole	1200	ML2-13.005	24.839	300	ML2-13.004	24.914	225	
ML2-57	22.877	1.575	Open Manhole	1050	ML2-13.006	21.302	375	ML2-13.005	21.377	300	
ML2-58	32.488	1.425	Open Manhole	1500	ML2-14.000	31.063	225				
ML2-59	31.813	1.597	Open Manhole	1500	ML2-14.001	30.215	300	ML2-14.000	30.290	225	
ML2-60	33.070	1.425	Open Manhole	1050	ML2-15.000	31.645	225				
ML2-61	32.797	1.971	Open Manhole	1200	ML2-15.001	30.826	225	ML2-15.000	30.826	225	
ML2-62	32.016	1.971	Open Manhole	1200	ML2-15.002	30.044	225	ML2-15.001	30.044	225	
ML2-63	31.129	1.635	Open Manhole	1050	ML2-15.003	29.494	225	ML2-15.002	29.494	225	
ML2-64	30.823	1.500	Open Manhole	1500	ML2-14.002	29.323	300	ML2-14.001	29.323	300	
								ML2-15.003	29.398	225	
ML2-65	29.153	1.500	Open Manhole	1500	ML2-14.003	27.653	300	ML2-14.002	27.653	300	
ML2-66	27.003	1.500	Open Manhole	1500	ML2-14.004	25.503	300	ML2-14.003	25.503	300	
ML2-67	24.331	1.575	Open Manhole	1500	ML2-14.005	22.756	375	ML2-14.004	22.831	300	
ML2-68	23.554	2.411	Open Manhole	1500	ML2-12.007	21.143	450	ML2-12.006	23.354	-3	1961
								ML2-13.006	21.218	375	
								ML2-14.005	21.218	375	
ML2-69	22.270	1.650	Open Manhole	1350	ML2-12.008	20.620	450	ML2-12.007	20.620	450	
ML2-70	20.109	1.650	Open Manhole	1350	ML2-12.009	18.459	450	ML2-12.008	18.459	450	
ML2-71	19.243	1.650	Open Manhole	1350	ML2-12.010	17.593	450	ML2-12.009	17.593	450	
ML2-72	18.761	1.650	Open Manhole	1500	ML2-12.011	17.111	450	ML2-12.010	17.111	450	
ML2-73	18.669	2.410	Open Manhole	2100	ML2-4.004	16.259	825	ML2-4.003	16.259	525	
								ML2-8.001	18.469	-3	1585
								ML2-9.000	16.484	225	
								ML2-10.004	16.484	375	
								ML2-11.000	18.469	-3	1585

Manhole Schedules for SWS-ML02

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)
								ML2-12.011	16.259	450	
ML2-74	32.290	0.200	Open Manhole	10	ML2-16.000	32.090	-3				
ML2-75	32.023	0.200	Open Manhole	10	ML2-16.001	31.823	-3	ML2-16.000	31.823	-3	
ML2-76	31.273	0.200	Open Manhole	10	ML2-16.002	31.073	-3	ML2-16.001	31.073	-3	
ML2-77	30.129	0.200	Open Manhole	10	ML2-16.003	29.929	-3	ML2-16.002	29.929	-3	
ML2-78	29.097	0.200	Open Manhole	10	ML2-16.004	28.897	-3	ML2-16.003	28.897	-3	
ML2-79	27.557	0.200	Open Manhole	10	ML2-16.005	27.357	-3	ML2-16.004	27.357	-3	
ML2-80	26.520	0.200	Junction		ML2-16.006	26.320	-3	ML2-16.005	26.320	-3	
ML2-RE	36.277	1.200	Open Manhole	10	ML2-17.000	35.077	300				
ML2-83	35.830	1.200	Open Manhole	1200	ML2-17.001	34.630	300	ML2-17.000	34.630	300	
ML2-81	34.440	1.200	Open Manhole	1200	ML2-17.002	33.240	300	ML2-17.001	33.240	300	
ML2-84	34.000	1.200	Open Manhole	1200	ML2-17.003	32.800	300	ML2-17.002	32.800	300	
ML2-dummy	34.728	0.398	Open Manhole	10	ML2-18.000	34.330	300				
ML2-dummy	29.200	1.456	Open Manhole	10	ML2-18.001	27.744	300	ML2-18.000	27.744	300	
ML2-85	32.018	1.575	Open Manhole	1500	ML2-19.000	30.443	375				
ML2-86	31.277	1.575	Open Manhole	1500	ML2-19.001	29.702	375	ML2-19.000	29.702	375	
ML2-87	29.959	1.576	Open Manhole	1500	ML2-19.002	28.383	375	ML2-19.001	28.383	375	
ML2-88	28.947	1.575	Open Manhole	1500	ML2-18.002	27.372	375	ML2-18.001	27.447	300	
								ML2-19.002	27.372	375	
ML2-89	27.560	1.575	Open Manhole	1500	ML2-18.003	25.985	375	ML2-18.002	25.985	375	
ML2-82	27.017	1.632	Open Manhole	1500	ML2-17.004	25.385	375	ML2-17.003	25.460	300	
								ML2-18.003	25.385	375	
ML2-90	26.359	1.575	Open Manhole	1500	ML2-17.005	24.784	375	ML2-17.004	24.784	375	
ML2-91	24.761	1.700	Open Manhole	1500	ML2-16.007	23.061	375	ML2-16.006	24.436	-3	1200
								ML2-17.005	23.061	375	
ML2-92	23.496	1.646	Open Manhole	1350	ML2-16.008	21.850	375	ML2-16.007	21.850	375	
ML2-93	20.639	1.575	Open Manhole	1350	ML2-16.009	19.064	375	ML2-16.008	19.064	375	
ML2-94A	19.700	1.425	Open Manhole	1200	ML2-20.000	18.275	225				
ML2-94	19.418	3.200	Open Manhole	2100	ML2-4.005	16.218	825	ML2-4.004	16.218	825	
								ML2-16.009	16.743	375	75
								ML2-20.000	16.893	225	75
ML2-01A	22.195	2.750	Open Manhole	414	ML2-21.000	19.445	250				
ML2-01	22.094	2.750	Open Manhole	416	ML2-21.001	19.344	250	ML2-21.000	19.344	250	
ML2-01B	21.986	2.750	Open Manhole	415	ML2-21.002	19.236	250	ML2-21.001	19.236	250	
ML2-02	21.881	2.850	Open Manhole	416	ML2-21.003	19.031	350	ML2-21.002	19.131	250	
ML2-02A	21.720	2.850	Open Manhole	417	ML2-21.004	18.870	350	ML2-21.003	18.870	350	
ML2-03	21.583	2.850	Open Manhole	416	ML2-21.005	18.733	350	ML2-21.004	18.733	350	
ML2-03A	21.442	2.850	Open Manhole	417	ML2-21.006	18.592	350	ML2-21.005	18.592	350	
ML2-04	21.312	2.850	Open Manhole	418	ML2-21.007	18.462	350	ML2-21.006	18.462	350	
ML2-04A	21.173	2.850	Open Manhole	415	ML2-21.008	18.323	350	ML2-21.007	18.323	350	
ML2-05	21.045	2.950	Open Manhole	418	ML2-21.009	18.095	450	ML2-21.008	18.195	350	
ML2-05A	20.904	2.950	Open Manhole	415	ML2-21.010	17.954	450	ML2-21.009	17.954	450	
ML2-06	20.773	2.950	Open Manhole	419	ML2-21.011	17.823	450	ML2-21.010	17.823	450	
ML2-06A	20.632	2.950	Open Manhole	419	ML2-21.012	17.682	450	ML2-21.011	17.682	450	
ML2-07	20.504	2.950	Open Manhole	418	ML2-21.013	17.554	450	ML2-21.012	17.554	450	
ML2-07A	20.363	2.950	Open Manhole	419	ML2-21.014	17.413	450	ML2-21.013	17.413	450	
ML2-08	20.235	2.950	Open Manhole	418	ML2-21.015	17.285	450	ML2-21.014	17.285	450	
ML2-08A	20.094	2.950	Open Manhole	418	ML2-21.016	17.144	450	ML2-21.015	17.144	450	
ML2-09	19.966	2.950	Open Manhole	419	ML2-21.017	17.016	450	ML2-21.016	17.016	450	
ML2-09A	19.846	2.950	Open Manhole	359	ML2-21.018	16.896	450	ML2-21.017	16.896	450	
ML2-10	19.762	2.950	Open Manhole	2100	ML2-21.019	16.812	450	ML2-21.018	16.812	450	
ML2-11D	22.500	2.750	Open Manhole	383	ML2-22.000	19.750	250				
ML2-11C	22.403	2.750	Open Manhole	379	ML2-22.001	19.653	250	ML2-22.000	19.653	250	
ML2-11B	22.293	2.750	Open Manhole	381	ML2-22.002	19.543	250	ML2-22.001	19.543	250	
ML2-11	22.189	2.750	Open Manhole	378	ML2-22.003	19.439	250	ML2-22.002	19.439	250	
ML2-11A	22.028	2.850	Open Manhole	380	ML2-22.004	19.178	350	ML2-22.003	19.278	250	
ML2-12	21.888	2.850	Open Manhole	380	ML2-22.005	19.038	350	ML2-22.004	19.038	350	
ML2-12A	21.746	2.850	Open Manhole	386	ML2-22.006	18.896	350	ML2-22.005	18.896	350	
ML2-13	21.621	2.850	Open Manhole	380	ML2-22.007	18.771	350	ML2-22.006	18.771	350	

Manhole Schedules for SWS-ML02

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)
ML2-13A	21.479	2.850	Open Manhole	382	ML2-22.008	18.629	350	ML2-22.007	18.629	350	
ML2-14	21.350	2.850	Open Manhole	385	ML2-22.009	18.500	350	ML2-22.008	18.500	350	
ML2-14A	21.214	2.850	Open Manhole	379	ML2-22.010	18.364	350	ML2-22.009	18.364	350	
ML2-15	21.075	2.850	Open Manhole	379	ML2-22.011	18.225	350	ML2-22.010	18.225	350	
ML2-15A	20.932	2.850	Open Manhole	384	ML2-22.012	18.082	350	ML2-22.011	18.082	350	
ML2-16	20.814	2.950	Open Manhole	379	ML2-22.013	17.864	450	ML2-22.012	17.964	350	
ML2-16A	20.669	2.950	Open Manhole	385	ML2-22.014	17.719	450	ML2-22.013	17.719	450	
ML2-17	20.542	2.950	Open Manhole	386	ML2-22.015	17.592	450	ML2-22.014	17.592	450	
ML2-17A	20.405	2.950	Open Manhole	385	ML2-22.016	17.455	450	ML2-22.015	17.455	450	
ML2-18	20.277	2.950	Open Manhole	385	ML2-22.017	17.327	450	ML2-22.016	17.327	450	
ML2-18A	20.158	2.950	Open Manhole	385	ML2-22.018	17.208	450	ML2-22.017	17.208	450	
ML2-19	20.089	3.307	Open Manhole	2100	ML2-21.020	16.782	525	ML2-21.019	16.782	450	
								ML2-22.018	16.782	450	
ML2-20	20.216	3.480	Open Manhole	2100	ML2-21.021	16.736	525	ML2-21.020	16.736	525	
ML2-21	20.002	0.150	Open Manhole	10	ML2-23.000	19.852	150				
ML2-22	19.729	1.650	Open Manhole	1500	ML2-23.001	18.079	450	ML2-23.000	19.579	150	1200
ML2-23	20.103	3.510	Open Manhole	1800	ML2-21.022	16.592	525	ML2-21.021	16.592	525	
								ML2-23.001	17.999	450	1332
ML2-24	19.682	3.319	Open Manhole	1800	ML2-21.023	16.363	525	ML2-21.022	16.363	525	
ML2-FB	17.600	1.500	Open Manhole	1800	ML2-4.006	16.100	900	ML2-4.005	16.100	825	
								ML2-21.023	16.100	525	
ML2-IB	17.600	1.900	Open Manhole	1800	ML2-4.007	16.100	900	ML2-4.006	15.700	900	
ML2-**	17.600	1.575	Open Manhole	1500		OUTFALL		ML2-4.007	16.025	900	
ML2-95A	17.451	0.061	Junction		ML2-24.000	17.390	-4				
ML2-95	18.241	1.500	Open Manhole	1050	ML2-24.001	16.741	300	ML2-24.000	17.225	-4	394
ML2-96	17.919	1.571	Open Manhole	1500	ML2-24.002	16.348	300	ML2-24.001	16.348	300	
ML2-97	17.476	1.258	Open Manhole	0		OUTFALL		ML2-24.002	16.218	300	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML2-25	17275.217	526121.663	17275.217	526121.663	Required	
ML2-26	17319.735	526114.143	17319.735	526114.143	Required	
ML2-27	17419.232	526101.186	17419.232	526101.186	Required	
ML2-28	17571.162	526108.734	17571.162	526108.734	Required	
ML2-29	17702.553	526142.223	17702.553	526142.223	Required	
ML2-30	17651.114	526125.688	17651.114	526125.688	Required	
ML2-31	17571.522	526109.034	17571.522	526109.034	Required	
ML2-32	17319.537	526113.163	17319.537	526113.163	Required	
ML2-33	17418.872	526098.998	17418.872	526098.998	Required	
ML2-34	17487.246	526100.631	17487.246	526100.631	Required	
ML2-35	17653.971	526112.497	17653.971	526112.497	Required	

Manhole Schedules for SWS-ML02

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML2-36	17574.738	526092.046	17574.738	526092.046	Required	
ML2-37	17574.579	526092.817	17574.579	526092.817	Required	
ML2-38	17209.271	526113.532	17209.271	526113.532	Required	
ML2-39	17264.228	526098.613	17264.228	526098.613	Required	
ML2-40	17302.244	526090.472	17302.244	526090.472	Required	
ML2-41	17381.519	526079.743	17381.519	526079.743	Required	
ML2-42	17424.270	526079.006	17424.270	526079.006	Required	
ML2-43	17424.187	526078.441	17424.187	526078.441	Required	
ML2-44	16694.131	526122.756	16694.131	526122.756	Required	
ML2-45	16785.513	526151.980	16785.513	526151.980	Required	
ML2-46	16879.254	526169.125	16879.254	526169.125	Required	
ML2-47	16955.286	526171.762	16955.286	526171.762	Required	
ML2-48	17055.449	526167.512	17055.449	526167.512	Required	
ML2-49	17150.748	526145.192	17150.748	526145.192	Required	
ML2-50	17245.399	526120.254	17245.399	526120.254	Required	
ML2-51	16705.704	526144.106	16705.704	526144.106	Required	
ML2-52	16801.169	526171.882	16801.169	526171.882	Required	
ML2-53	16893.002	526186.007	16893.002	526186.007	Required	
ML2-54	16993.265	526187.940	16993.265	526187.940	Required	
ML2-55	17092.659	526176.287	17092.659	526176.287	Required	
ML2-56	17187.636	526152.672	17187.636	526152.672	Required	
ML2-57	17277.349	526128.732	17277.349	526128.732	Required	
ML2-58	16785.566	526151.602	16785.566	526151.602	Required	
ML2-59	16876.717	526168.493	16876.717	526168.493	Required	
ML2-60	16694.766	526116.127	16694.766	526116.127	Required	
ML2-61	16789.083	526143.664	16789.083	526143.664	Required	

Manhole Schedules for SWS-ML02

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML2-62	16886.590	526158.167	16886.590	526158.167	Required	
ML2-63	16958.101	526160.308	16958.101	526160.308	Required	
ML2-64	16955.762	526172.403	16955.762	526172.403	Required	
ML2-65	17054.266	526166.154	17054.266	526166.154	Required	
ML2-66	17151.108	526146.595	17151.108	526146.595	Required	
ML2-67	17245.211	526118.766	17245.211	526118.766	Required	
ML2-68	17269.678	526112.094	17269.678	526112.094	Required	
ML2-69	17312.670	526101.299	17312.670	526101.299	Required	
ML2-70	17382.326	526090.403	17382.326	526090.403	Required	
ML2-71	17423.907	526087.082	17423.907	526087.082	Required	
ML2-72	17478.982	526086.376	17478.982	526086.376	Required	
ML2-73	17481.818	526079.970	17481.818	526079.970	Required	
ML2-74	16699.937	526104.549	16699.937	526104.549	Required	
ML2-75	16790.774	526130.560	16790.774	526130.560	Required	
ML2-76	16884.150	526145.278	16884.150	526145.278	Required	
ML2-77	16985.502	526147.577	16985.502	526147.577	Required	
ML2-78	17040.809	526139.407	17040.809	526139.407	Required	
ML2-79	17108.101	526128.042	17108.101	526128.042	Required	
ML2-80	17172.725	526108.900			No Entry	
ML2-RE	17010.012	526123.804	17010.012	526123.804	Required	
ML2-83	17037.030	526134.200	17037.030	526134.200	Required	
ML2-81	17100.579	526123.086	17100.579	526123.086	Required	
ML2-84	17120.716	526104.853	17120.716	526104.853	Required	
ML2-dummy	17034.114	526134.980	17034.114	526134.980	Required	
ML2-dummy	17037.699	526138.839	17037.699	526138.839	Required	
ML2-85	16791.722	526130.973	16791.722	526130.973	Required	

Manhole Schedules for SWS-ML02

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML2-86	16883.719	526144.762	16883.719	526144.762	Required	
ML2-87	16983.572	526146.204	16983.572	526146.204	Required	
ML2-88	17041.187	526140.577	17041.187	526140.577	Required	
ML2-89	17108.015	526128.397	17108.015	526128.397	Required	
ML2-82	17140.159	526119.306	17140.159	526119.306	Required	
ML2-90	17173.084	526109.619	17173.084	526109.619	Required	
ML2-91	17252.409	526087.207	17252.409	526087.207	Required	
ML2-92	17298.329	526076.883	17298.329	526076.883	Required	
ML2-93	17380.722	526063.858	17380.722	526063.858	Required	
ML2-94A	17574.136	526076.099	17574.136	526076.099	Required	
ML2-94	17479.257	526065.836	17479.257	526065.836	Required	
ML2-01A	18136.918	526367.536	18136.918	526367.536	Required	
ML2-01	18120.369	526356.344	18120.369	526356.344	Required	
ML2-01B	18102.387	526344.227	18102.387	526344.227	Required	
ML2-02	18084.825	526332.788	18084.825	526332.788	Required	
ML2-02A	18057.817	526315.675	18057.817	526315.675	Required	
ML2-03	18034.581	526301.401	18034.581	526301.401	Required	
ML2-03A	18010.535	526287.117	18010.535	526287.117	Required	
ML2-04	17988.056	526274.165	17988.056	526274.165	Required	
ML2-04A	17963.692	526260.529	17963.692	526260.529	Required	
ML2-05	17941.528	526248.505	17941.528	526248.505	Required	
ML2-05A	17916.786	526235.499	17916.786	526235.499	Required	
ML2-06	17894.084	526223.919	17894.084	526223.919	Required	
ML2-06A	17868.890	526211.516	17868.890	526211.516	Required	
ML2-07	17845.871	526200.537	17845.871	526200.537	Required	
ML2-07A	17820.401	526188.813	17820.401	526188.813	Required	

Manhole Schedules for SWS-ML02

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML2-08	17797.038	526178.423	17797.038	526178.423	Required	
ML2-08A	17771.313	526167.411	17771.313	526167.411	Required	
ML2-09	17747.797	526157.654	17747.797	526157.654	Required	
ML2-09A	17725.508	526148.775	17725.508	526148.775	Required	
ML2-10	17715.483	526144.958	17715.483	526144.958	Required	
ML2-11D	18143.883	526357.180	18143.883	526357.180	Required	
ML2-11C	18127.435	526345.802	18127.435	526345.802	Required	
ML2-11B	18109.125	526333.886	18109.125	526333.886	Required	
ML2-11	18091.525	526322.101	18091.525	526322.101	Required	
ML2-11A	18064.472	526305.043	18064.472	526305.043	Required	
ML2-12	18040.858	526290.484	18040.858	526290.484	Required	
ML2-12A	18016.702	526276.324	18016.702	526276.324	Required	
ML2-13	17994.397	526263.275	17994.397	526263.275	Required	
ML2-13A	17969.928	526249.664	17969.928	526249.664	Required	
ML2-14	17947.119	526237.259	17947.119	526237.259	Required	
ML2-14A	17922.394	526224.119	17922.394	526224.119	Required	
ML2-15	17897.947	526211.778	17897.947	526211.778	Required	
ML2-15A	17872.765	526199.535	17872.765	526199.535	Required	
ML2-16	17851.005	526189.066	17851.005	526189.066	Required	
ML2-16A	17825.479	526177.559	17825.479	526177.559	Required	
ML2-17	17802.111	526167.102	17802.111	526167.102	Required	
ML2-17A	17776.425	526155.956	17776.425	526155.956	Required	
ML2-18	17752.509	526146.039	17752.509	526146.039	Required	
ML2-18A	17730.235	526137.182	17730.235	526137.182	Required	
ML2-19	17719.548	526133.491	17719.548	526133.491	Required	
ML2-20	17713.589	526121.069	17713.589	526121.069	Required	

Manhole Schedules for SWS-ML02

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML2-21	17708.152	526130.400	17708.152	526130.400	Required	
ML2-22	17657.385	526113.099	17657.385	526113.099	Required	
ML2-23	17662.344	526098.403	17662.344	526098.403	Required	
ML2-24	17575.898	526075.917	17575.898	526075.917	Required	
ML2-FB	17489.067	526008.697	17489.067	526008.697	Required	
ML2-IB	17518.482	525998.108	17518.482	525998.108	Required	
ML2-**	17542.941	525992.616			No Entry	
ML2-95A	17500.987	526018.419			No Entry	
ML2-95	17504.585	526023.945	17504.585	526023.945	Required	
ML2-96	17598.331	526034.116	17598.331	526034.116	Required	
ML2-97	17624.512	526032.814			No Entry	

PIPELINE SCHEDULES for SWS-ML02

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)
ML2-4.000	1:5	-1	ML2-25	23.257	23.058	-0.001	Open Manhole	10
ML2-4.001	o	225	ML2-26	21.395	19.970	1.200	Open Manhole	1050
ML2-4.002	o	225	ML2-27	18.587	17.162	1.200	Open Manhole	1500
ML2-5.000	o	225	ML2-28	18.393	16.968	1.200	Open Manhole	1500
ML2-6.000	2V	-3	ML2-29	19.338	19.138	0.000	Open Manhole	10
ML2-6.001	2V	-3	ML2-30	18.800	18.600	0.000	Open Manhole	10
ML2-6.002	2V	-3	ML2-31	18.395	18.195	0.000	Open Manhole	10
ML2-7.000	2V	-3	ML2-32	21.495	21.295	0.000	Open Manhole	10
ML2-7.001	2V	-3	ML2-33	18.828	18.628	0.000	Open Manhole	10
ML2-4.003	o	525	ML2-34	18.009	16.319	1.165	Open Manhole	1500
ML2-8.000	2V	-3	ML2-35	19.482	19.282	0.000	Open Manhole	10
ML2-8.001	2V	-3	ML2-36	19.069	18.869	0.000	Open Manhole	10
ML2-9.000	o	225	ML2-37	19.069	17.644	1.200	Open Manhole	1500
ML2-10.000	2V	-3	ML2-38	25.790	25.590	0.000	Open Manhole	10
ML2-10.001	1:5	-1	ML2-39	23.882	23.796	-0.114	Open Manhole	10
ML2-10.002	2V	-3	ML2-40	22.755	22.555	0.000	Open Manhole	10
ML2-10.003	2V	-3	ML2-41	20.026	19.826	0.000	Open Manhole	10
ML2-10.004	o	375	ML2-42	19.140	17.640	1.125	Open Manhole	1500
ML2-11.000	2V	-3	ML2-43	19.161	18.961	0.000	Open Manhole	10
ML2-12.000	2V	-3	ML2-44	32.734	32.534	0.000	Open Manhole	10
ML2-12.001	2V	-3	ML2-45	32.491	32.291	0.000	Open Manhole	10
ML2-12.002	2V	-3	ML2-46	31.855	31.655	0.000	Open Manhole	10
ML2-12.003	2V	-3	ML2-47	30.867	30.667	0.000	Open Manhole	10
ML2-12.004	2V	-3	ML2-48	29.345	29.145	0.000	Open Manhole	10
ML2-12.005	2V	-3	ML2-49	27.038	26.838	0.000	Open Manhole	10
ML2-12.006	2V	-3	ML2-50	24.538	24.338	0.000	Open Manhole	10

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)
ML2-4.000	45.149	24.2	ML2-26	21.395	21.195	0.000	Open Manhole	1050
ML2-4.001	100.337	35.7	ML2-27	18.587	17.162	1.200	Open Manhole	1500
ML2-4.002	68.016	80.7	ML2-34	18.009	16.319	1.465	Open Manhole	1500
ML2-5.000	84.306	130.0	ML2-34	18.009	16.319	1.464	Open Manhole	1500
ML2-6.000	54.031	100.4	ML2-30	18.800	18.600	0.000	Open Manhole	10
ML2-6.001	81.316	200.8	ML2-31	18.395	18.195	0.000	Open Manhole	10
ML2-6.002	84.694	219.4	ML2-34	18.009	17.809	0.000	Open Manhole	1500
ML2-7.000	100.341	37.6	ML2-33	18.828	18.628	0.000	Open Manhole	10
ML2-7.001	68.393	83.5	ML2-34	18.009	17.809	0.000	Open Manhole	1500
ML2-4.003	21.362	356.0	ML2-73	18.669	16.259	1.885	Open Manhole	2100
ML2-8.000	81.830	198.1	ML2-36	19.069	18.869	0.000	Open Manhole	10
ML2-8.001	93.701	234.3	ML2-73	18.669	18.469	0.000	Open Manhole	2100
ML2-9.000	93.646	80.7	ML2-73	18.669	16.484	1.960	Open Manhole	2100
ML2-10.000	56.947	31.7	ML2-39	23.882	23.796	-0.114	Open Manhole	10
ML2-10.001	38.877	31.3	ML2-40	22.755	22.555	0.000	Open Manhole	10
ML2-10.002	79.998	29.3	ML2-41	20.026	19.826	0.000	Open Manhole	10
ML2-10.003	42.758	49.4	ML2-42	19.140	18.961	-0.021	Open Manhole	1500
ML2-10.004	57.556	49.8	ML2-73	18.669	16.484	1.810	Open Manhole	2100
ML2-11.000	57.652	117.2	ML2-73	18.669	18.469	0.000	Open Manhole	2100
ML2-12.000	95.941	394.8	ML2-45	32.491	32.291	0.000	Open Manhole	10
ML2-12.001	95.296	149.8	ML2-46	31.855	31.655	0.000	Open Manhole	10
ML2-12.002	76.078	77.0	ML2-47	30.867	30.667	0.000	Open Manhole	10
ML2-12.003	100.253	65.9	ML2-48	29.345	29.145	0.000	Open Manhole	10
ML2-12.004	97.878	42.4	ML2-49	27.038	26.838	0.000	Open Manhole	10
ML2-12.005	97.882	39.2	ML2-50	24.538	24.338	0.000	Open Manhole	10
ML2-12.006	25.613	26.0	ML2-68	23.554	23.354	0.000	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML02

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)
ML2-13.000	o	225	ML2-51	33.343	31.918	1.200	Open Manhole	1050
ML2-13.001	o	225	ML2-52	32.998	31.153	1.620	Open Manhole	1200
ML2-13.002	o	225	ML2-53	32.251	30.453	1.572	Open Manhole	1200
ML2-13.003	o	225	ML2-54	30.883	29.457	1.200	Open Manhole	1200
ML2-13.004	o	225	ML2-55	29.038	27.613	1.200	Open Manhole	1200
ML2-13.005	o	300	ML2-56	26.339	24.839	1.200	Open Manhole	1200
ML2-13.006	o	375	ML2-57	22.877	21.302	1.200	Open Manhole	1050
ML2-14.000	o	225	ML2-58	32.488	31.063	1.200	Open Manhole	1500
ML2-14.001	o	300	ML2-59	31.813	30.215	1.297	Open Manhole	1500
ML2-15.000	o	225	ML2-60	33.070	31.645	1.200	Open Manhole	1050
ML2-15.001	o	225	ML2-61	32.797	30.826	1.746	Open Manhole	1200
ML2-15.002	o	225	ML2-62	32.016	30.044	1.746	Open Manhole	1200
ML2-15.003	o	225	ML2-63	31.129	29.494	1.410	Open Manhole	1050
ML2-14.002	o	300	ML2-64	30.823	29.323	1.200	Open Manhole	1500
ML2-14.003	o	300	ML2-65	29.153	27.653	1.200	Open Manhole	1500
ML2-14.004	o	300	ML2-66	27.003	25.503	1.200	Open Manhole	1500
ML2-14.005	o	375	ML2-67	24.331	22.756	1.200	Open Manhole	1500
ML2-12.007	o	450	ML2-68	23.554	21.143	1.961	Open Manhole	1500
ML2-12.008	o	450	ML2-69	22.270	20.620	1.200	Open Manhole	1350
ML2-12.009	o	450	ML2-70	20.109	18.459	1.200	Open Manhole	1350
ML2-12.010	o	450	ML2-71	19.243	17.593	1.200	Open Manhole	1350
ML2-12.011	o	450	ML2-72	18.761	17.111	1.200	Open Manhole	1500
ML2-4.004	o	825	ML2-73	18.669	16.259	1.585	Open Manhole	2100
ML2-16.000	2V	-3	ML2-74	32.290	32.090	0.000	Open Manhole	10
ML2-16.001	2V	-3	ML2-75	32.023	31.823	0.000	Open Manhole	10
ML2-16.002	2V	-3	ML2-76	31.273	31.073	0.000	Open Manhole	10
ML2-16.003	2V	-3	ML2-77	30.129	29.929	0.000	Open Manhole	10
ML2-16.004	2V	-3	ML2-78	29.097	28.897	0.000	Open Manhole	10
ML2-16.005	2V	-3	ML2-79	27.557	27.357	0.000	Open Manhole	10
ML2-16.006	2V	-3	ML2-80	26.520	26.320	0.000	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)
ML2-13.000	99.424	130.0	ML2-52	32.998	31.153	1.620	Open Manhole	1200
ML2-13.001	92.913	132.7	ML2-53	32.251	30.453	1.572	Open Manhole	1200
ML2-13.002	100.282	100.7	ML2-54	30.883	29.457	1.200	Open Manhole	1200
ML2-13.003	100.074	54.3	ML2-55	29.038	27.613	1.200	Open Manhole	1200
ML2-13.004	97.869	36.3	ML2-56	26.339	24.914	1.200	Open Manhole	1200
ML2-13.005	92.852	26.8	ML2-57	22.877	21.377	1.200	Open Manhole	1050
ML2-13.006	18.321	218.1	ML2-68	23.554	21.218	1.961	Open Manhole	1500
ML2-14.000	92.702	120.0	ML2-59	31.813	30.290	1.297	Open Manhole	1500
ML2-14.001	79.141	88.7	ML2-64	30.823	29.323	1.200	Open Manhole	1500
ML2-15.000	98.255	120.0	ML2-61	32.797	30.826	1.746	Open Manhole	1200
ML2-15.001	98.579	126.1	ML2-62	32.016	30.044	1.746	Open Manhole	1200
ML2-15.002	71.544	130.1	ML2-63	31.129	29.494	1.410	Open Manhole	1050
ML2-15.003	12.319	128.3	ML2-64	30.823	29.398	1.200	Open Manhole	1500
ML2-14.002	98.702	59.1	ML2-65	29.153	27.653	1.200	Open Manhole	1500
ML2-14.003	98.798	46.0	ML2-66	27.003	25.503	1.200	Open Manhole	1500
ML2-14.004	98.131	36.7	ML2-67	24.331	22.831	1.200	Open Manhole	1500
ML2-14.005	25.361	16.5	ML2-68	23.554	21.218	1.961	Open Manhole	1500
ML2-12.007	44.326	84.8	ML2-69	22.270	20.620	1.200	Open Manhole	1350
ML2-12.008	70.504	32.6	ML2-70	20.109	18.459	1.200	Open Manhole	1350
ML2-12.009	41.713	48.2	ML2-71	19.243	17.593	1.200	Open Manhole	1350
ML2-12.010	55.079	114.3	ML2-72	18.761	17.111	1.200	Open Manhole	1500
ML2-12.011	7.005	8.2	ML2-73	18.669	16.259	1.960	Open Manhole	2100
ML2-4.004	14.365	350.0	ML2-94	19.418	16.218	2.375	Open Manhole	2100
ML2-16.000	94.488	353.9	ML2-75	32.023	31.823	0.000	Open Manhole	10
ML2-16.001	94.529	126.0	ML2-76	31.273	31.073	0.000	Open Manhole	10
ML2-16.002	101.377	88.6	ML2-77	30.129	29.929	0.000	Open Manhole	10
ML2-16.003	55.907	54.2	ML2-78	29.097	28.897	0.000	Open Manhole	10
ML2-16.004	68.245	44.3	ML2-79	27.557	27.357	0.000	Open Manhole	10
ML2-16.005	67.400	65.0	ML2-80	26.520	26.320	0.000	Junction	
ML2-16.006	82.584	43.8	ML2-91	24.761	24.436	0.125	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML02

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)
ML2-17.000	o	300	ML2-RE	36.277	35.077	0.900	Open Manhole	10
ML2-17.001	o	300	ML2-83	35.830	34.630	0.900	Open Manhole	1200
ML2-17.002	o	300	ML2-81	34.440	33.240	0.900	Open Manhole	1200
ML2-17.003	o	300	ML2-84	34.000	32.800	0.900	Open Manhole	1200
ML2-18.000	o	300	ML2-dummy	34.728	34.330	0.098	Open Manhole	10
ML2-18.001	o	300	ML2-dummy	29.200	27.744	1.156	Open Manhole	10
ML2-19.000	o	375	ML2-85	32.018	30.443	1.200	Open Manhole	1500
ML2-19.001	o	375	ML2-86	31.277	29.702	1.200	Open Manhole	1500
ML2-19.002	o	375	ML2-87	29.959	28.383	1.201	Open Manhole	1500
ML2-18.002	o	375	ML2-88	28.947	27.372	1.200	Open Manhole	1500
ML2-18.003	o	375	ML2-89	27.560	25.985	1.200	Open Manhole	1500
ML2-17.004	o	375	ML2-82	27.017	25.385	1.257	Open Manhole	1500
ML2-17.005	o	375	ML2-90	26.359	24.784	1.200	Open Manhole	1500
ML2-16.007	o	375	ML2-91	24.761	23.061	1.325	Open Manhole	1500
ML2-16.008	o	375	ML2-92	23.496	21.850	1.271	Open Manhole	1350
ML2-16.009	o	375	ML2-93	20.639	19.064	1.200	Open Manhole	1350
ML2-20.000	o	225	ML2-94A	19.700	18.275	1.200	Open Manhole	1200
ML2-4.005	o	825	ML2-94	19.418	16.218	2.375	Open Manhole	2100
ML2-21.000	o	250	ML2-01A	22.195	19.445	2.500	Open Manhole	414
ML2-21.001	o	250	ML2-01	22.094	19.344	2.500	Open Manhole	416
ML2-21.002	o	250	ML2-01B	21.986	19.236	2.500	Open Manhole	415
ML2-21.003	o	350	ML2-02	21.881	19.031	2.500	Open Manhole	416
ML2-21.004	o	350	ML2-02A	21.720	18.870	2.500	Open Manhole	417
ML2-21.005	o	350	ML2-03	21.583	18.733	2.500	Open Manhole	416
ML2-21.006	o	350	ML2-03A	21.442	18.592	2.500	Open Manhole	417
ML2-21.007	o	350	ML2-04	21.312	18.462	2.500	Open Manhole	418
ML2-21.008	o	350	ML2-04A	21.173	18.323	2.500	Open Manhole	415

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)
ML2-17.000	28.950	64.8	ML2-83	35.830	34.630	0.900	Open Manhole	1200
ML2-17.001	64.513	46.4	ML2-81	34.440	33.240	0.900	Open Manhole	1200
ML2-17.002	27.166	61.7	ML2-84	34.000	32.800	0.900	Open Manhole	1200
ML2-17.003	24.226	3.3	ML2-82	27.017	25.460	1.257	Open Manhole	1500
ML2-18.000	5.267	0.8	ML2-dummy	29.200	27.744	1.156	Open Manhole	10
ML2-18.001	3.897	13.1	ML2-88	28.947	27.447	1.200	Open Manhole	1500
ML2-19.000	93.025	125.5	ML2-86	31.277	29.702	1.200	Open Manhole	1500
ML2-19.001	99.863	75.7	ML2-87	29.959	28.383	1.201	Open Manhole	1500
ML2-19.002	57.889	57.3	ML2-88	28.947	27.372	1.200	Open Manhole	1500
ML2-18.002	67.929	49.0	ML2-89	27.560	25.985	1.200	Open Manhole	1500
ML2-18.003	33.405	55.7	ML2-82	27.017	25.385	1.257	Open Manhole	1500
ML2-17.004	34.321	57.1	ML2-90	26.359	24.784	1.200	Open Manhole	1500
ML2-17.005	82.430	47.8	ML2-91	24.761	23.061	1.325	Open Manhole	1500
ML2-16.007	47.066	38.9	ML2-92	23.496	21.850	1.271	Open Manhole	1350
ML2-16.008	83.416	29.9	ML2-93	20.639	19.064	1.200	Open Manhole	1350
ML2-16.009	98.555	42.5	ML2-94	19.418	16.743	2.300	Open Manhole	2100
ML2-20.000	95.433	69.1	ML2-94	19.418	16.893	2.300	Open Manhole	2100
ML2-4.005	57.975	491.3	ML2-FB	17.600	16.100	0.675	Open Manhole	1800
ML2-21.000	19.978	197.8	ML2-01	22.094	19.344	2.500	Open Manhole	416
ML2-21.001	21.684	200.8	ML2-01B	21.986	19.236	2.500	Open Manhole	415
ML2-21.002	20.959	199.6	ML2-02	21.881	19.131	2.500	Open Manhole	416
ML2-21.003	31.973	198.6	ML2-02A	21.720	18.870	2.500	Open Manhole	417
ML2-21.004	27.270	199.1	ML2-03	21.583	18.733	2.500	Open Manhole	416
ML2-21.005	27.969	198.4	ML2-03A	21.442	18.592	2.500	Open Manhole	417
ML2-21.006	25.943	199.6	ML2-04	21.312	18.462	2.500	Open Manhole	418
ML2-21.007	27.920	200.9	ML2-04A	21.173	18.323	2.500	Open Manhole	415
ML2-21.008	25.215	197.0	ML2-05	21.045	18.195	2.500	Open Manhole	418

PIPELINE SCHEDULES for SWS-ML02

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)
ML2-21.009	o	450	ML2-05	21.045	18.095	2.500	Open Manhole	418
ML2-21.010	o	450	ML2-05A	20.904	17.954	2.500	Open Manhole	415
ML2-21.011	o	450	ML2-06	20.773	17.823	2.500	Open Manhole	419
ML2-21.012	o	450	ML2-06A	20.632	17.682	2.500	Open Manhole	419
ML2-21.013	o	450	ML2-07	20.504	17.554	2.500	Open Manhole	418
ML2-21.014	o	450	ML2-07A	20.363	17.413	2.500	Open Manhole	419
ML2-21.015	o	450	ML2-08	20.235	17.285	2.500	Open Manhole	418
ML2-21.016	o	450	ML2-08A	20.094	17.144	2.500	Open Manhole	418
ML2-21.017	o	450	ML2-09	19.966	17.016	2.500	Open Manhole	419
ML2-21.018	o	450	ML2-09A	19.846	16.896	2.500	Open Manhole	359
ML2-21.019	o	450	ML2-10	19.762	16.812	2.500	Open Manhole	2100
ML2-22.000	o	250	ML2-11D	22.500	19.750	2.500	Open Manhole	383
ML2-22.001	o	250	ML2-11C	22.403	19.653	2.500	Open Manhole	379
ML2-22.002	o	250	ML2-11B	22.293	19.543	2.500	Open Manhole	381
ML2-22.003	o	250	ML2-11	22.189	19.439	2.500	Open Manhole	378
ML2-22.004	o	350	ML2-11A	22.028	19.178	2.500	Open Manhole	380
ML2-22.005	o	350	ML2-12	21.888	19.038	2.500	Open Manhole	380
ML2-22.006	o	350	ML2-12A	21.746	18.896	2.500	Open Manhole	386
ML2-22.007	o	350	ML2-13	21.621	18.771	2.500	Open Manhole	380
ML2-22.008	o	350	ML2-13A	21.479	18.629	2.500	Open Manhole	382
ML2-22.009	o	350	ML2-14	21.350	18.500	2.500	Open Manhole	385
ML2-22.010	o	350	ML2-14A	21.214	18.364	2.500	Open Manhole	379
ML2-22.011	o	350	ML2-15	21.075	18.225	2.500	Open Manhole	379
ML2-22.012	o	350	ML2-15A	20.932	18.082	2.500	Open Manhole	384
ML2-22.013	o	450	ML2-16	20.814	17.864	2.500	Open Manhole	379
ML2-22.014	o	450	ML2-16A	20.669	17.719	2.500	Open Manhole	385
ML2-22.015	o	450	ML2-17	20.542	17.592	2.500	Open Manhole	386
ML2-22.016	o	450	ML2-17A	20.405	17.455	2.500	Open Manhole	385
ML2-22.017	o	450	ML2-18	20.277	17.327	2.500	Open Manhole	385
ML2-22.018	o	450	ML2-18A	20.158	17.208	2.500	Open Manhole	385
ML2-21.020	o	525	ML2-19	20.089	16.782	2.782	Open Manhole	2100
ML2-21.021	o	525	ML2-20	20.216	16.736	2.955	Open Manhole	2100
ML2-23.000	5 \/	150	ML2-21	20.002	19.852	0.000	Open Manhole	10

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)
ML2-21.009	27.952	198.2	ML2-05A	20.904	17.954	2.500	Open Manhole	415
ML2-21.010	25.485	194.5	ML2-06	20.773	17.823	2.500	Open Manhole	419
ML2-21.011	28.082	199.2	ML2-06A	20.632	17.682	2.500	Open Manhole	419
ML2-21.012	25.503	199.2	ML2-07	20.504	17.554	2.500	Open Manhole	418
ML2-21.013	28.039	198.9	ML2-07A	20.363	17.413	2.500	Open Manhole	419
ML2-21.014	25.569	199.8	ML2-08	20.235	17.285	2.500	Open Manhole	418
ML2-21.015	27.983	198.5	ML2-08A	20.094	17.144	2.500	Open Manhole	418
ML2-21.016	25.460	198.9	ML2-09	19.966	17.016	2.500	Open Manhole	419
ML2-21.017	23.992	199.9	ML2-09A	19.846	16.896	2.500	Open Manhole	359
ML2-21.018	10.727	127.7	ML2-10	19.762	16.812	2.500	Open Manhole	2100
ML2-21.019	12.166	400.0	ML2-19	20.089	16.782	2.857	Open Manhole	2100
ML2-22.000	20.000	206.2	ML2-11C	22.403	19.653	2.500	Open Manhole	379
ML2-22.001	21.846	198.6	ML2-11B	22.293	19.543	2.500	Open Manhole	381
ML2-22.002	21.182	203.7	ML2-11	22.189	19.439	2.500	Open Manhole	378
ML2-22.003	31.982	198.6	ML2-11A	22.028	19.278	2.500	Open Manhole	380
ML2-22.004	27.741	198.2	ML2-12	21.888	19.038	2.500	Open Manhole	380
ML2-22.005	28.000	197.2	ML2-12A	21.746	18.896	2.500	Open Manhole	386
ML2-22.006	25.842	206.7	ML2-13	21.621	18.771	2.500	Open Manhole	380
ML2-22.007	28.000	197.2	ML2-13A	21.479	18.629	2.500	Open Manhole	382
ML2-22.008	25.965	201.3	ML2-14	21.350	18.500	2.500	Open Manhole	385
ML2-22.009	28.000	205.9	ML2-14A	21.214	18.364	2.500	Open Manhole	379
ML2-22.010	27.385	197.0	ML2-15	21.075	18.225	2.500	Open Manhole	379
ML2-22.011	28.000	195.8	ML2-15A	20.932	18.082	2.500	Open Manhole	384
ML2-22.012	24.147	204.6	ML2-16	20.814	17.964	2.500	Open Manhole	379
ML2-22.013	28.000	193.1	ML2-16A	20.669	17.719	2.500	Open Manhole	385
ML2-22.014	25.601	201.6	ML2-17	20.542	17.592	2.500	Open Manhole	386
ML2-22.015	28.000	204.4	ML2-17A	20.405	17.455	2.500	Open Manhole	385
ML2-22.016	25.891	202.3	ML2-18	20.277	17.327	2.500	Open Manhole	385
ML2-22.017	23.970	201.4	ML2-18A	20.158	17.208	2.500	Open Manhole	385
ML2-22.018	11.306	26.5	ML2-19	20.089	16.782	2.857	Open Manhole	2100
ML2-21.020	13.778	299.5	ML2-20	20.216	16.736	2.955	Open Manhole	2100
ML2-21.021	56.034	390.0	ML2-23	20.103	16.592	2.985	Open Manhole	1800
ML2-23.000	53.634	196.5	ML2-22	19.729	19.579	0.000	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML02

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)
ML2-23.001	o	450	ML2-22	19.729	18.079	1.200	Open Manhole	1500
ML2-21.022	o	525	ML2-23	20.103	16.592	2.985	Open Manhole	1800
ML2-21.023	o	525	ML2-24	19.682	16.363	2.794	Open Manhole	1800
ML2-4.006	o	900	ML2-FB	17.600	16.100	0.600	Open Manhole	1800
ML2-4.007	o	900	ML2-IB	17.600	16.100	0.600	Open Manhole	1800
ML2-24.000	g	-4	ML2-95A	17.451	17.390	-0.149	Junction	
ML2-24.001	o	300	ML2-95	18.241	16.741	1.200	Open Manhole	1050
ML2-24.002	o	300	ML2-96	17.919	16.348	1.271	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)
ML2-23.001	15.510	193.9	ML2-23	20.103	17.999	1.654	Open Manhole	1800
ML2-21.022	89.322	390.0	ML2-24	19.682	16.363	2.794	Open Manhole	1800
ML2-21.023	109.810	417.5	ML2-FB	17.600	16.100	0.975	Open Manhole	1800
ML2-4.006	31.263	78.2	ML2-IB	17.600	15.700	1.000	Open Manhole	1800
ML2-4.007	25.068	334.2	ML2-**	17.600	16.025	0.675	Open Manhole	1500
ML2-24.000	6.594	40.0	ML2-95	18.241	17.225	0.806	Open Manhole	1050
ML2-24.001	94.297	240.0	ML2-96	17.919	16.348	1.271	Open Manhole	1500
ML2-24.002	26.213	201.6	ML2-97	17.476	16.218	0.958	Open Manhole	0

Free Flowing Outfall Details for SWS-ML02

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML2-4.007	ML2-**	17.600	16.025	0.000	1500	0

Free Flowing Outfall Details for SWS-ML02

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML2-24.002	ML2-97	17.476	16.218	0.000	0	0

Online Controls for SWS-ML02

Pump Manhole: ML2-IB, DS/PN: ML2-4.007, Volume (m³): 22.6

Invert Level (m) 16.100

Depth (m)	Flow (l/s)
5.000	0.0000

Offline Controls for SWS-ML02

Pipe Manhole: ML2-31, DS/PN: ML2-6.002, Loop to PN: ML2-5.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	18.195
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-32, DS/PN: ML2-7.000, Loop to PN: ML2-4.001

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	21.295
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-33, DS/PN: ML2-7.001, Loop to PN: ML2-4.002

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	18.628
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-36, DS/PN: ML2-8.001, Loop to PN: ML2-9.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	18.869
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-45, DS/PN: ML2-12.001, Loop to PN: ML2-14.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	32.291
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-46, DS/PN: ML2-12.002, Loop to PN: ML2-14.001

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Double Pipe	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.655
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-47, DS/PN: ML2-12.003, Loop to PN: ML2-14.002

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	30.667
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-48, DS/PN: ML2-12.004, Loop to PN: ML2-14.003

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	29.145
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-49, DS/PN: ML2-12.005, Loop to PN: ML2-14.004

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	26.838
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-50, DS/PN: ML2-12.006, Loop to PN: ML2-14.005

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	24.338
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-75, DS/PN: ML2-16.001, Loop to PN: ML2-19.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.823
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-76, DS/PN: ML2-16.002, Loop to PN: ML2-19.001

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.073
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-77, DS/PN: ML2-16.003, Loop to PN: ML2-19.002

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	29.929
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-78, DS/PN: ML2-16.004, Loop to PN: ML2-18.002

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	28.897
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-79, DS/PN: ML2-16.005, Loop to PN: ML2-17.004

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	27.357
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML2-80, DS/PN: ML2-16.006, Loop to PN: ML2-17.005

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	26.320
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Storage Structures for SWS-ML02

Infiltration Basin Manhole: ML2-FB, DS/PN: ML2-4.006

Invert Level (m) 16.100 Infiltration Coefficient Side (m/hr) 0.02160 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	423.6	1.500	820.4

Infiltration Basin Manhole: ML2-IB, DS/PN: ML2-4.007

Invert Level (m) 15.600 Infiltration Coefficient Side (m/hr) 0.02160 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.02160 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	5244.9	1.600	6704.2	1.601	7050.1	2.000	7553.8

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

Simulation Criteria

Areal Reduction Factor 1.000 | Manhole Headloss Coeff (Global) 0.500 | MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 | Foul Sewage per hectare (l/s) 0.000 | Inlet Coeffiecient 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 16 | Number of Time/Area Diagrams 0
Number of Online Controls 1 | Number of Storage Structures 2 | Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 | DTS Status OFF | Inertia Status ON
Analysis Timestep Coarse | DVD 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
Climate Change (%): 20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	15 minute 1 year Winter I+20%	23.257	23.066	-0.192	0.000	0.01	0.000	1.0	8.5	FLOOD RISK
ML2-4.001	ML2-26	15 minute 1 year Winter I+20%	21.395	20.028	-0.167	0.000	0.15	0.046	1.4	11.0	OK
ML2-4.002	ML2-27	15 minute 1 year Winter I+20%	18.587	17.249	-0.138	0.000	0.31	0.165	1.1	15.3	OK
ML2-5.000	ML2-28	15 minute 1 year Winter I+20%	18.393	17.039	-0.154	0.000	0.21	0.117	0.8	8.3	OK
ML2-6.000	ML2-29	15 minute 1 year Winter I+20%	19.338	19.189	-0.149	0.000	0.07	0.000	0.2	15.8	FLOOD RISK
ML2-6.001	ML2-30	15 minute 1 year Winter I+20%	18.800	18.688	-0.112	0.000	0.17	0.610	0.2	29.7	FLOOD RISK
ML2-6.002	ML2-31	15 minute 1 year Winter I+20%	18.395	18.292	-0.103	0.000	0.22	1.352	0.2	36.1	FLOOD RISK
ML2-7.000	ML2-32	15 minute 1 year Winter I+20%	21.495	21.346	-0.149	0.000	0.06	0.000	0.4	24.3	FLOOD RISK
ML2-7.001	ML2-33	15 minute 1 year Winter I+20%	18.828	18.699	-0.129	0.000	0.12	0.181	0.3	32.5	FLOOD RISK
ML2-4.003	ML2-34	15 minute 1 year Winter I+20%	18.009	16.731	-0.113	0.000	0.43	3.138	0.5	86.0	OK
ML2-8.000	ML2-35	15 minute 1 year Winter I+20%	19.482	19.349	-0.133	0.000	0.10	0.000	0.2	17.3	FLOOD RISK
ML2-8.001	ML2-36	15 minute 1 year Winter I+20%	19.069	18.953	-0.116	0.000	0.17	1.140	0.2	26.6	FLOOD RISK
ML2-9.000	ML2-37	15 minute 1 year Winter I+20%	19.069	17.698	-0.171	0.000	0.13	0.087	0.9	6.4	OK
ML2-10.000	ML2-38	15 minute 1 year Winter I+20%	25.790	25.627	-0.163	0.000	0.04	0.000	0.4	16.9	FLOOD RISK
ML2-10.001	ML2-39	15 minute 1 year Winter I+20%	23.882	23.822	-0.174	0.000	0.03	0.048	1.0	28.8	FLOOD RISK
ML2-10.002	ML2-40	15 minute 1 year Winter I+20%	22.755	22.618	-0.137	0.000	0.09	0.123	0.5	41.9	FLOOD RISK
ML2-10.003	ML2-41	15 minute 1 year Winter I+20%	20.026	19.902	-0.124	0.000	0.14	0.152	0.4	49.3	FLOOD RISK
ML2-10.004	ML2-42	15 minute 1 year Winter I+20%	19.140	17.755	-0.260	0.000	0.21	0.195	1.7	48.8	OK
ML2-11.000	ML2-43	15 minute 1 year Winter I+20%	19.161	19.008	-0.153	0.000	0.06	0.000	0.2	13.2	FLOOD RISK
ML2-12.000	ML2-44	15 minute 1 year Winter I+20%	32.734	32.621	-0.113	0.000	0.16	0.000	0.2	19.3	FLOOD RISK
ML2-12.001	ML2-45	15 minute 1 year Winter I+20%	32.491	32.369	-0.122	0.000	0.14	2.095	0.2	27.0	FLOOD RISK
ML2-12.002	ML2-46	15 minute 1 year Winter I+20%	31.855	31.714	-0.141	0.000	0.08	0.593	0.3	22.8	FLOOD RISK
ML2-12.003	ML2-47	15 minute 1 year Winter I+20%	30.867	30.734	-0.133	0.000	0.11	0.351	0.3	31.5	FLOOD RISK
ML2-12.004	ML2-48	15 minute 1 year Winter I+20%	29.345	29.212	-0.133	0.000	0.11	0.299	0.4	39.5	FLOOD RISK
ML2-12.005	ML2-49	15 minute 1 year Winter I+20%	27.038	26.905	-0.133	0.000	0.11	0.193	0.4	41.1	FLOOD RISK
ML2-12.006	ML2-50	15 minute 1 year Winter I+20%	24.538	24.395	-0.143	0.000	0.08	0.149	0.5	38.8	FLOOD RISK
ML2-13.000	ML2-51	15 minute 1 year Winter I+20%	33.343	31.975	-0.168	0.000	0.13	0.045	0.7	5.2	OK
ML2-13.001	ML2-52	15 minute 1 year Winter I+20%	32.998	31.234	-0.144	0.000	0.26	0.155	0.8	10.2	OK
ML2-13.002	ML2-53	15 minute 1 year Winter I+20%	32.251	30.549	-0.130	0.000	0.36	0.187	1.0	16.0	OK
ML2-13.003	ML2-54	15 minute 1 year Winter I+20%	30.883	29.549	-0.133	0.000	0.34	0.160	1.4	20.8	OK
ML2-13.004	ML2-55	15 minute 1 year Winter I+20%	29.038	27.701	-0.137	0.000	0.32	0.125	1.7	24.0	OK
ML2-13.005	ML2-56	15 minute 1 year Winter I+20%	26.339	24.925	-0.214	0.000	0.18	0.093	2.0	33.4	OK
ML2-13.006	ML2-57	15 minute 1 year Winter I+20%	22.877	21.442	-0.236	0.000	0.30	0.130	0.9	33.3	OK
ML2-14.000	ML2-58	15 minute 1 year Winter I+20%	32.488	31.119	-0.169	0.000	0.14	0.090	0.7	5.8	OK
ML2-14.001	ML2-59	15 minute 1 year Winter I+20%	31.813	30.305	-0.211	0.000	0.19	0.151	1.1	19.3	OK
ML2-15.000	ML2-60	15 minute 1 year Winter I+20%	33.070	31.671	-0.199	0.000	0.03	0.018	0.5	1.2	OK
ML2-15.001	ML2-61	15 minute 1 year Winter I+20%	32.797	30.865	-0.186	0.000	0.07	0.068	0.6	2.6	OK
ML2-15.002	ML2-62	15 minute 1 year Winter I+20%	32.016	30.092	-0.178	0.000	0.10	0.086	0.6	3.8	OK
ML2-15.003	ML2-63	15 minute 1 year Winter I+20%	31.129	29.541	-0.178	0.000	0.10	0.074	0.6	3.8	OK
ML2-14.002	ML2-64	15 minute 1 year Winter I+20%	30.823	29.418	-0.205	0.000	0.22	0.228	1.4	27.1	OK
ML2-14.003	ML2-65	15 minute 1 year Winter I+20%	29.153	27.748	-0.205	0.000	0.22	0.204	1.6	30.9	OK
ML2-14.004	ML2-66	15 minute 1 year Winter I+20%	27.003	25.598	-0.205	0.000	0.22	0.194	1.8	35.0	OK
ML2-14.005	ML2-67	15 minute 1 year Winter I+20%	24.331	22.834	-0.297	0.000	0.10	0.131	2.3	38.2	OK
ML2-12.007	ML2-68	15 minute 1 year Winter I+20%	23.554	21.323	-0.270	0.000	0.34	0.568	1.8	106.3	OK
ML2-12.008	ML2-69	15 minute 1 year Winter I+20%	22.270	20.764	-0.306	0.000	0.22	0.438	2.4	107.0	OK
ML2-12.009	ML2-70	15 minute 1 year Winter I+20%	20.109	18.623	-0.286	0.000	0.28	0.349	2.1	107.3	OK
ML2-12.010	ML2-71	15 minute 1 year Winter I+20%	19.243	17.799	-0.244	0.000	0.43	0.559	1.5	107.0	OK
ML2-12.011	ML2-72	15 minute 1 year Winter I+20%	18.761	17.249	-0.312	0.000	0.21	0.529	2.6	107.1	OK
ML2-4.004	ML2-73	15 minute 1 year Winter I+20%	18.669	16.692	-0.392	0.000	0.52	5.451	0.9	255.6	OK
ML2-16.000	ML2-74	15 minute 1 year Winter I+20%	32.290	32.177	-0.113	0.000	0.16	0.000	0.2	20.8	FLOOD RISK
ML2-16.001	ML2-75	15 minute 1 year Winter I+20%	32.023	31.903	-0.120	0.000	0.14	1.942	0.3	30.3	FLOOD RISK
ML2-16.002	ML2-76	15 minute 1 year Winter I+20%	31.273	31.155	-0.118	0.000	0.15	0.710	0.3	39.0	FLOOD RISK
ML2-16.003	ML2-77	15 minute 1 year Winter I+20%	30.129	30.001	-0.128	0.000	0.13	0.435	0.4	41.6	FLOOD RISK

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-16.004	ML2-78	15 minute 1 year Winter I+20%	29.097	28.968	-0.129	0.000	0.12	0.262	0.4	44.1	FLOOD RISK
ML2-16.005	ML2-79	15 minute 1 year Winter I+20%	27.557	27.437	-0.120	0.000	0.15	0.242	0.4	45.3	FLOOD RISK
ML2-16.006	ML2-80	15 minute 1 year Winter I+20%	26.520	26.390	-0.130	0.000	0.12	0.372	0.4	44.0	FLOOD RISK*
ML2-17.000	ML2-RE	15 minute 1 year Summer I+20%	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	15 minute 1 year Summer I+20%	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	15 minute 1 year Summer I+20%	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	15 minute 1 year Summer I+20%	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	15 minute 1 year Summer I+20%	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	15 minute 1 year Summer I+20%	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	15 minute 1 year Winter I+20%	32.018	30.491	-0.327	0.000	0.04	0.076	0.7	6.0	OK
ML2-19.001	ML2-86	15 minute 1 year Winter I+20%	31.277	29.763	-0.314	0.000	0.06	0.165	1.1	12.2	OK
ML2-19.002	ML2-87	15 minute 1 year Winter I+20%	29.959	28.452	-0.306	0.000	0.08	0.160	1.2	17.2	OK
ML2-18.002	ML2-88	15 minute 1 year Winter I+20%	28.947	27.448	-0.299	0.000	0.09	0.164	1.4	22.0	OK
ML2-18.003	ML2-89	15 minute 1 year Winter I+20%	27.560	26.065	-0.295	0.000	0.10	0.167	1.3	21.9	OK
ML2-17.004	ML2-82	15 minute 1 year Winter I+20%	27.017	25.474	-0.286	0.000	0.13	0.193	1.4	27.9	OK
ML2-17.005	ML2-90	15 minute 1 year Winter I+20%	26.359	24.874	-0.285	0.000	0.13	0.196	1.6	32.4	OK
ML2-16.007	ML2-91	15 minute 1 year Winter I+20%	24.761	23.190	-0.246	0.000	0.26	0.310	2.3	76.3	OK
ML2-16.008	ML2-92	15 minute 1 year Winter I+20%	23.496	21.976	-0.249	0.000	0.25	0.242	2.4	76.6	OK
ML2-16.009	ML2-93	15 minute 1 year Winter I+20%	20.639	19.203	-0.236	0.000	0.29	0.261	2.1	77.5	OK
ML2-20.000	ML2-94A	15 minute 1 year Winter I+20%	19.700	18.310	-0.190	0.000	0.06	0.034	0.8	3.1	OK
ML2-4.005	ML2-94	15 minute 1 year Winter I+20%	19.418	16.649	-0.394	0.000	0.53	4.072	1.2	323.0	OK
ML2-21.000	ML2-01A	15 minute 1 year Winter I+20%	22.195	19.503	-0.192	0.000	0.12	0.007	0.6	5.1	OK
ML2-21.001	ML2-01	15 minute 1 year Winter I+20%	22.094	19.423	-0.171	0.000	0.21	0.119	0.7	9.2	OK
ML2-21.002	ML2-01B	15 minute 1 year Winter I+20%	21.986	19.333	-0.153	0.000	0.32	0.151	0.8	13.8	OK
ML2-21.003	ML2-02	15 minute 1 year Winter I+20%	21.881	19.128	-0.253	0.000	0.17	0.013	0.8	17.8	OK
ML2-21.004	ML2-02A	15 minute 1 year Winter I+20%	21.720	18.984	-0.236	0.000	0.23	0.268	0.9	24.0	OK
ML2-21.005	ML2-03	15 minute 1 year Winter I+20%	21.583	18.860	-0.223	0.000	0.28	0.355	0.9	29.5	OK
ML2-21.006	ML2-03A	15 minute 1 year Winter I+20%	21.442	18.731	-0.211	0.000	0.33	0.448	1.0	34.3	OK
ML2-21.007	ML2-04	15 minute 1 year Winter I+20%	21.312	18.610	-0.202	0.000	0.37	0.505	1.0	38.8	OK
ML2-21.008	ML2-04A	15 minute 1 year Winter I+20%	21.173	18.480	-0.193	0.000	0.42	0.586	1.0	43.2	OK
ML2-21.009	ML2-05	15 minute 1 year Winter I+20%	21.045	18.245	-0.300	0.000	0.24	0.102	1.0	47.0	OK
ML2-21.010	ML2-05A	15 minute 1 year Winter I+20%	20.904	18.111	-0.293	0.000	0.27	0.677	1.0	51.5	OK
ML2-21.011	ML2-06	15 minute 1 year Winter I+20%	20.773	17.985	-0.288	0.000	0.28	0.691	1.1	54.9	OK
ML2-21.012	ML2-06A	15 minute 1 year Winter I+20%	20.632	17.852	-0.280	0.000	0.31	0.796	1.1	58.7	OK
ML2-21.013	ML2-07	15 minute 1 year Winter I+20%	20.504	17.728	-0.276	0.000	0.32	0.803	1.1	62.0	OK
ML2-21.014	ML2-07A	15 minute 1 year Winter I+20%	20.363	17.594	-0.269	0.000	0.34	0.883	1.1	65.0	OK
ML2-21.015	ML2-08	15 minute 1 year Winter I+20%	20.235	17.468	-0.267	0.000	0.35	0.878	1.1	67.4	OK
ML2-21.016	ML2-08A	15 minute 1 year Winter I+20%	20.094	17.333	-0.261	0.000	0.37	0.952	1.1	70.5	OK
ML2-21.017	ML2-09	15 minute 1 year Winter I+20%	19.966	17.213	-0.253	0.000	0.38	0.987	1.1	72.2	OK
ML2-21.018	ML2-09A	15 minute 1 year Winter I+20%	19.846	17.140	-0.206	0.000	0.43	1.431	0.9	73.2	OK
ML2-21.019	ML2-10	15 minute 1 year Winter I+20%	19.762	17.119	-0.143	0.000	0.73	1.937	0.6	73.9	OK
ML2-22.000	ML2-11D	15 minute 1 year Winter I+20%	22.500	19.800	-0.200	0.000	0.09	0.005	0.5	3.7	OK
ML2-22.001	ML2-11C	15 minute 1 year Winter I+20%	22.403	19.718	-0.185	0.000	0.15	0.100	0.7	6.6	OK
ML2-22.002	ML2-11B	15 minute 1 year Winter I+20%	22.293	19.624	-0.169	0.000	0.23	0.123	0.7	10.0	OK
ML2-22.003	ML2-11	15 minute 1 year Winter I+20%	22.189	19.530	-0.159	0.000	0.28	0.142	0.8	12.8	OK
ML2-22.004	ML2-11A	15 minute 1 year Winter I+20%	22.028	19.275	-0.253	0.000	0.17	0.010	0.8	17.4	OK
ML2-22.005	ML2-12	15 minute 1 year Winter I+20%	21.888	19.145	-0.243	0.000	0.20	0.206	0.9	21.2	OK
ML2-22.006	ML2-12A	15 minute 1 year Winter I+20%	21.746	19.013	-0.233	0.000	0.24	0.282	0.9	24.8	OK
ML2-22.007	ML2-13	15 minute 1 year Winter I+20%	21.621	18.894	-0.227	0.000	0.27	0.332	0.9	28.1	OK
ML2-22.008	ML2-13A	15 minute 1 year Winter I+20%	21.479	18.761	-0.218	0.000	0.30	0.388	0.9	31.3	OK
ML2-22.009	ML2-14	15 minute 1 year Winter I+20%	21.350	18.639	-0.211	0.000	0.33	0.443	1.0	34.2	OK
ML2-22.010	ML2-14A	15 minute 1 year Winter I+20%	21.214	18.508	-0.206	0.000	0.36	0.494	1.0	37.2	OK
ML2-22.011	ML2-15	15 minute 1 year Winter I+20%	21.075	18.374	-0.201	0.000	0.38	0.512	1.0	39.7	OK
ML2-22.012	ML2-15A	15 minute 1 year Winter I+20%	20.932	18.240	-0.192	0.000	0.42	0.577	1.0	42.3	OK
ML2-22.013	ML2-16	15 minute 1 year Winter I+20%	20.814	18.008	-0.306	0.000	0.22	0.089	1.0	44.4	OK
ML2-22.014	ML2-16A	15 minute 1 year Winter I+20%	20.669	17.869	-0.300	0.000	0.24	0.601	1.0	46.5	OK
ML2-22.015	ML2-17	15 minute 1 year Winter I+20%	20.542	17.745	-0.297	0.000	0.25	0.631	1.0	48.5	OK
ML2-22.016	ML2-17A	15 minute 1 year Winter I+20%	20.405	17.612	-0.293	0.000	0.26	0.684	1.0	50.3	OK
ML2-22.017	ML2-18	15 minute 1 year Winter I+20%	20.277	17.487	-0.290	0.000	0.27	0.691	1.0	51.9	OK
ML2-22.018	ML2-18A	15 minute 1 year Winter I+20%	20.158	17.321	-0.337	0.000	0.14	0.293	1.7	53.2	OK
ML2-21.020	ML2-19	15 minute 1 year Winter I+20%	20.089	17.086	-0.221	0.000	0.63	2.322	1.0	127.2	OK
ML2-21.021	ML2-20	15 minute 1 year Winter I+20%	20.216	17.041	-0.220	0.000	0.63	2.213	1.0	126.5	OK
ML2-23.000	ML2-21	15 minute 1 year Winter I+20%	20.002	19.921	-0.081	0.000	0.13	0.000	0.5	11.8	FLOOD RISK
ML2-23.001	ML2-22	15 minute 1 year Winter I+20%	19.729	18.157	-0.372	0.000	0.07	0.147	0.6	11.6	OK
ML2-21.022	ML2-23	15 minute 1 year Winter I+20%	20.103	16.892	-0.225	0.000	0.61	5.504	1.0	126.1	OK
ML2-21.023	ML2-24	15 minute 1 year Winter I+20%	19.682	16.644	-0.244	0.000	0.55	5.921	1.1	122.0	OK
ML2-4.006	ML2-FB	30 minute 1 year Winter I+20%	17.600	16.393	-0.607	0.000	0.23	146.865	1.8	331.7	OK
ML2-4.007	ML2-IB	2880 minute 1 year Winter I+20%	17.600	15.856	-1.144	0.000	0.00	1369.824	0.0	0.0	OK
ML2-24.000	ML2-95A	15 minute 1 year Summer I+20%	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	15 minute 1 year Summer I+20%	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	15 minute 1 year Summer I+20%	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	16	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Coarse DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	15 minute 5 year Winter I+20%	23.257	23.071	-0.187	0.000	0.01	0.000	1.0	13.5	FLOOD RISK
ML2-4.001	ML2-26	15 minute 5 year Winter I+20%	21.395	20.045	-0.150	0.000	0.23	0.060	1.6	17.7	OK
ML2-4.002	ML2-27	15 minute 5 year Winter I+20%	18.587	17.275	-0.112	0.000	0.49	0.225	1.3	24.5	OK
ML2-5.000	ML2-28	15 minute 5 year Winter I+20%	18.393	17.056	-0.137	0.000	0.32	0.148	0.9	12.5	OK
ML2-6.000	ML2-29	15 minute 5 year Winter I+20%	19.338	19.204	-0.134	0.000	0.10	0.000	0.3	25.2	FLOOD RISK
ML2-6.001	ML2-30	15 minute 5 year Winter I+20%	18.800	18.713	-0.087	0.000	0.28	0.986	0.3	47.4	FLOOD RISK
ML2-6.002	ML2-31	15 minute 5 year Winter I+20%	18.395	18.318	-0.077	0.000	0.34	2.579	0.3	56.3	FLOOD RISK
ML2-7.000	ML2-32	15 minute 5 year Winter I+20%	21.495	21.361	-0.134	0.000	0.10	0.000	0.5	38.4	FLOOD RISK
ML2-7.001	ML2-33	15 minute 5 year Winter I+20%	18.828	18.719	-0.109	0.000	0.19	0.236	0.4	51.5	FLOOD RISK
ML2-4.003	ML2-34	15 minute 5 year Winter I+20%	18.009	16.886	0.042	0.000	0.67	4.677	0.6	134.9	SURCHARGED
ML2-8.000	ML2-35	15 minute 5 year Winter I+20%	19.482	19.367	-0.115	0.000	0.16	0.000	0.2	27.6	FLOOD RISK
ML2-8.001	ML2-36	15 minute 5 year Winter I+20%	19.069	18.976	-0.093	0.000	0.27	1.580	0.2	42.2	FLOOD RISK
ML2-9.000	ML2-37	15 minute 5 year Winter I+20%	19.069	17.713	-0.156	0.000	0.20	0.113	1.0	10.0	OK
ML2-10.000	ML2-38	15 minute 5 year Winter I+20%	25.790	25.639	-0.151	0.000	0.06	0.000	0.4	26.9	FLOOD RISK
ML2-10.001	ML2-39	15 minute 5 year Winter I+20%	23.882	23.829	-0.167	0.000	0.04	0.066	1.1	45.8	FLOOD RISK
ML2-10.002	ML2-40	15 minute 5 year Winter I+20%	22.755	22.635	-0.120	0.000	0.15	0.159	0.6	66.7	FLOOD RISK
ML2-10.003	ML2-41	15 minute 5 year Winter I+20%	20.026	19.925	-0.101	0.000	0.23	0.201	0.5	78.4	FLOOD RISK
ML2-10.004	ML2-42	15 minute 5 year Winter I+20%	19.140	17.788	-0.227	0.000	0.33	0.252	1.9	77.7	OK
ML2-11.000	ML2-43	15 minute 5 year Winter I+20%	19.161	19.023	-0.138	0.000	0.09	0.000	0.2	21.1	FLOOD RISK
ML2-12.000	ML2-44	15 minute 5 year Winter I+20%	32.734	32.646	-0.088	0.000	0.25	0.000	0.2	30.6	FLOOD RISK
ML2-12.001	ML2-45	15 minute 5 year Winter I+20%	32.491	32.392	-0.099	0.000	0.22	2.773	0.3	43.1	FLOOD RISK
ML2-12.002	ML2-46	15 minute 5 year Winter I+20%	31.855	31.732	-0.123	0.000	0.14	0.785	0.3	37.9	FLOOD RISK
ML2-12.003	ML2-47	15 minute 5 year Winter I+20%	30.867	30.755	-0.112	0.000	0.17	0.466	0.4	51.8	FLOOD RISK
ML2-12.004	ML2-48	15 minute 5 year Winter I+20%	29.345	29.232	-0.113	0.000	0.17	0.393	0.5	64.3	FLOOD RISK
ML2-12.005	ML2-49	15 minute 5 year Winter I+20%	27.038	26.925	-0.113	0.000	0.17	0.254	0.5	66.5	FLOOD RISK
ML2-12.006	ML2-50	15 minute 5 year Winter I+20%	24.538	24.411	-0.127	0.000	0.13	0.195	0.6	62.8	FLOOD RISK
ML2-13.000	ML2-51	15 minute 5 year Winter I+20%	33.343	31.991	-0.152	0.000	0.21	0.059	0.8	8.2	OK
ML2-13.001	ML2-52	15 minute 5 year Winter I+20%	32.998	31.258	-0.120	0.000	0.42	0.205	1.0	16.2	OK
ML2-13.002	ML2-53	15 minute 5 year Winter I+20%	32.251	30.578	-0.100	0.000	0.57	0.303	1.2	25.5	OK
ML2-13.003	ML2-54	15 minute 5 year Winter I+20%	30.883	29.577	-0.106	0.000	0.54	0.241	1.6	33.0	OK
ML2-13.004	ML2-55	15 minute 5 year Winter I+20%	29.038	27.727	-0.111	0.000	0.50	0.176	1.9	37.6	OK
ML2-13.005	ML2-56	15 minute 5 year Winter I+20%	26.339	24.949	-0.190	0.000	0.28	0.122	2.3	52.6	OK
ML2-13.006	ML2-57	15 minute 5 year Winter I+20%	22.877	21.482	-0.195	0.000	0.47	0.181	1.0	52.4	OK
ML2-14.000	ML2-58	15 minute 5 year Winter I+20%	32.488	31.135	-0.153	0.000	0.22	0.119	0.8	8.9	OK
ML2-14.001	ML2-59	15 minute 5 year Winter I+20%	31.813	30.326	-0.190	0.000	0.29	0.196	1.3	29.0	OK
ML2-15.000	ML2-60	15 minute 5 year Winter I+20%	33.070	31.678	-0.192	0.000	0.05	0.024	0.6	1.9	OK
ML2-15.001	ML2-61	15 minute 5 year Winter I+20%	32.797	30.876	-0.175	0.000	0.10	0.089	0.7	4.2	OK
ML2-15.002	ML2-62	15 minute 5 year Winter I+20%	32.016	30.104	-0.165	0.000	0.15	0.111	0.7	6.0	OK
ML2-15.003	ML2-63	15 minute 5 year Winter I+20%	31.129	29.553	-0.166	0.000	0.15	0.096	0.7	6.0	OK
ML2-14.002	ML2-64	15 minute 5 year Winter I+20%	30.823	29.443	-0.180	0.000	0.34	0.347	1.6	42.0	OK
ML2-14.003	ML2-65	15 minute 5 year Winter I+20%	29.153	27.774	-0.179	0.000	0.34	0.288	1.8	48.3	OK
ML2-14.004	ML2-66	15 minute 5 year Winter I+20%	27.003	25.625	-0.178	0.000	0.35	0.272	2.0	54.8	OK
ML2-14.005	ML2-67	15 minute 5 year Winter I+20%	24.331	22.854	-0.277	0.000	0.15	0.165	2.6	59.9	OK
ML2-12.007	ML2-68	15 minute 5 year Winter I+20%	23.554	21.379	-0.214	0.000	0.54	0.955	2.0	169.7	OK
ML2-12.008	ML2-69	15 minute 5 year Winter I+20%	22.270	20.806	-0.264	0.000	0.36	0.659	2.8	170.7	OK
ML2-12.009	ML2-70	15 minute 5 year Winter I+20%	20.109	18.672	-0.237	0.000	0.45	0.505	2.3	171.2	OK
ML2-12.010	ML2-71	15 minute 5 year Winter I+20%	19.243	17.868	-0.175	0.000	0.68	0.948	1.7	170.9	OK
ML2-12.011	ML2-72	15 minute 5 year Winter I+20%	18.761	17.289	-0.272	0.000	0.33	0.804	2.9	171.0	OK
ML2-4.004	ML2-73	15 minute 5 year Winter I+20%	18.669	16.854	-0.230	0.000	0.84	8.320	1.0	407.9	OK
ML2-16.000	ML2-74	15 minute 5 year Winter I+20%	32.290	32.202	-0.088	0.000	0.26	0.000	0.2	33.1	FLOOD RISK
ML2-16.001	ML2-75	15 minute 5 year Winter I+20%	32.023	31.927	-0.096	0.000	0.22	2.564	0.3	48.4	FLOOD RISK
ML2-16.002	ML2-76	15 minute 5 year Winter I+20%	31.273	31.179	-0.094	0.000	0.24	0.965	0.4	62.7	FLOOD RISK
ML2-16.003	ML2-77	15 minute 5 year Winter I+20%	30.129	30.023	-0.106	0.000	0.20	0.574	0.5	67.0	FLOOD RISK
ML2-16.004	ML2-78	15 minute 5 year Winter I+20%	29.097	28.989	-0.108	0.000	0.20	0.345	0.5	71.1	FLOOD RISK
ML2-16.005	ML2-79	15 minute 5 year Winter I+20%	27.557	27.461	-0.096	0.000	0.24	0.321	0.4	73.2	FLOOD RISK
ML2-16.006	ML2-80	15 minute 5 year Winter I+20%	26.520	26.410	-0.110	0.000	0.19	0.490	0.5	71.0	FLOOD RISK*

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-17.000	ML2-RE	15 minute 5 year Summer I+20%	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	15 minute 5 year Summer I+20%	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	15 minute 5 year Summer I+20%	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	15 minute 5 year Summer I+20%	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	15 minute 5 year Summer I+20%	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	15 minute 5 year Summer I+20%	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	15 minute 5 year Winter I+20%	32.018	30.504	-0.314	0.000	0.06	0.099	0.8	9.6	OK
ML2-19.001	ML2-86	15 minute 5 year Winter I+20%	31.277	29.781	-0.296	0.000	0.10	0.219	1.2	19.5	OK
ML2-19.002	ML2-87	15 minute 5 year Winter I+20%	29.959	28.470	-0.288	0.000	0.12	0.205	1.4	27.4	OK
ML2-18.002	ML2-88	15 minute 5 year Winter I+20%	28.947	27.467	-0.280	0.000	0.15	0.208	1.6	35.2	OK
ML2-18.003	ML2-89	15 minute 5 year Winter I+20%	27.560	26.086	-0.274	0.000	0.16	0.214	1.5	35.0	OK
ML2-17.004	ML2-82	15 minute 5 year Winter I+20%	27.017	25.501	-0.259	0.000	0.21	0.271	1.5	44.7	OK
ML2-17.005	ML2-90	15 minute 5 year Winter I+20%	26.359	24.900	-0.259	0.000	0.21	0.276	1.8	51.9	OK
ML2-16.007	ML2-91	15 minute 5 year Winter I+20%	24.761	23.229	-0.207	0.000	0.42	0.456	2.6	123.0	OK
ML2-16.008	ML2-92	15 minute 5 year Winter I+20%	23.496	22.014	-0.211	0.000	0.40	0.356	2.7	123.6	OK
ML2-16.009	ML2-93	15 minute 5 year Winter I+20%	20.639	19.246	-0.193	0.000	0.47	0.376	2.4	124.8	OK
ML2-20.000	ML2-94A	15 minute 5 year Winter I+20%	19.700	18.321	-0.179	0.000	0.09	0.046	0.9	4.9	OK
ML2-4.005	ML2-94	15 minute 5 year Winter I+20%	19.418	16.812	-0.231	0.000	0.86	6.268	1.3	518.6	OK
ML2-21.000	ML2-01A	15 minute 5 year Winter I+20%	22.195	19.519	-0.176	0.000	0.19	0.009	0.7	8.2	OK
ML2-21.001	ML2-01	15 minute 5 year Winter I+20%	22.094	19.445	-0.149	0.000	0.34	0.156	0.8	14.7	OK
ML2-21.002	ML2-01B	15 minute 5 year Winter I+20%	21.986	19.362	-0.124	0.000	0.50	0.268	0.9	21.9	OK
ML2-21.003	ML2-02	15 minute 5 year Winter I+20%	21.881	19.155	-0.226	0.000	0.27	0.044	0.9	28.3	OK
ML2-21.004	ML2-02A	15 minute 5 year Winter I+20%	21.720	19.017	-0.203	0.000	0.37	0.520	1.0	38.1	OK
ML2-21.005	ML2-03	15 minute 5 year Winter I+20%	21.583	18.896	-0.187	0.000	0.44	0.622	1.1	46.3	OK
ML2-21.006	ML2-03A	15 minute 5 year Winter I+20%	21.442	18.773	-0.169	0.000	0.52	0.754	1.1	54.2	OK
ML2-21.007	ML2-04	15 minute 5 year Winter I+20%	21.312	18.656	-0.156	0.000	0.59	0.831	1.1	61.1	OK
ML2-21.008	ML2-04A	15 minute 5 year Winter I+20%	21.173	18.531	-0.142	0.000	0.66	0.966	1.2	67.9	OK
ML2-21.009	ML2-05	15 minute 5 year Winter I+20%	21.045	18.288	-0.257	0.000	0.38	0.186	1.1	74.0	OK
ML2-21.010	ML2-05A	15 minute 5 year Winter I+20%	20.904	18.157	-0.247	0.000	0.42	1.074	1.2	81.2	OK
ML2-21.011	ML2-06	15 minute 5 year Winter I+20%	20.773	18.033	-0.240	0.000	0.44	1.097	1.2	86.7	OK
ML2-21.012	ML2-06A	15 minute 5 year Winter I+20%	20.632	17.903	-0.229	0.000	0.48	1.289	1.2	92.6	OK
ML2-21.013	ML2-07	15 minute 5 year Winter I+20%	20.504	17.780	-0.224	0.000	0.50	1.293	1.2	97.9	OK
ML2-21.014	ML2-07A	15 minute 5 year Winter I+20%	20.363	17.648	-0.215	0.000	0.53	1.450	1.2	102.4	OK
ML2-21.015	ML2-08	15 minute 5 year Winter I+20%	20.235	17.523	-0.212	0.000	0.54	1.428	1.3	106.2	OK
ML2-21.016	ML2-08A	15 minute 5 year Winter I+20%	20.094	17.463	-0.131	0.000	0.56	2.458	1.2	108.3	OK
ML2-21.017	ML2-09	15 minute 5 year Winter I+20%	19.966	17.410	-0.056	0.000	0.56	3.108	1.1	106.4	OK
ML2-21.018	ML2-09A	15 minute 5 year Winter I+20%	19.846	17.339	-0.007	0.000	0.61	3.314	0.9	103.7	OK
ML2-21.019	ML2-10	30 minute 5 year Winter I+20%	19.762	17.250	-0.012	0.000	1.00	2.849	0.7	101.7	OK
ML2-22.000	ML2-11D	15 minute 5 year Winter I+20%	22.500	19.813	-0.187	0.000	0.14	0.007	0.6	5.9	OK
ML2-22.001	ML2-11C	15 minute 5 year Winter I+20%	22.403	19.737	-0.166	0.000	0.24	0.131	0.7	10.6	OK
ML2-22.002	ML2-11B	15 minute 5 year Winter I+20%	22.293	19.648	-0.145	0.000	0.37	0.161	0.8	15.9	OK
ML2-22.003	ML2-11	15 minute 5 year Winter I+20%	22.189	19.558	-0.131	0.000	0.45	0.230	0.9	20.5	OK
ML2-22.004	ML2-11A	15 minute 5 year Winter I+20%	22.028	19.301	-0.227	0.000	0.26	0.041	0.9	27.6	OK
ML2-22.005	ML2-12	15 minute 5 year Winter I+20%	21.888	19.173	-0.215	0.000	0.32	0.417	1.0	33.4	OK
ML2-22.006	ML2-12A	15 minute 5 year Winter I+20%	21.746	19.047	-0.199	0.000	0.38	0.530	1.0	38.9	OK
ML2-22.007	ML2-13	15 minute 5 year Winter I+20%	21.621	18.930	-0.191	0.000	0.42	0.591	1.0	44.3	OK
ML2-22.008	ML2-13A	15 minute 5 year Winter I+20%	21.479	18.800	-0.179	0.000	0.48	0.674	1.1	49.4	OK
ML2-22.009	ML2-14	15 minute 5 year Winter I+20%	21.350	18.681	-0.169	0.000	0.53	0.742	1.1	54.0	OK
ML2-22.010	ML2-14A	15 minute 5 year Winter I+20%	21.214	18.552	-0.162	0.000	0.56	0.822	1.1	58.7	OK
ML2-22.011	ML2-15	15 minute 5 year Winter I+20%	21.075	18.421	-0.154	0.000	0.60	0.850	1.1	62.7	OK
ML2-22.012	ML2-15A	15 minute 5 year Winter I+20%	20.932	18.290	-0.142	0.000	0.66	0.952	1.1	66.7	OK
ML2-22.013	ML2-16	15 minute 5 year Winter I+20%	20.814	18.049	-0.265	0.000	0.35	0.170	1.1	69.9	OK
ML2-22.014	ML2-16A	15 minute 5 year Winter I+20%	20.669	17.912	-0.257	0.000	0.38	0.968	1.1	73.1	OK
ML2-22.015	ML2-17	15 minute 5 year Winter I+20%	20.542	17.789	-0.253	0.000	0.40	1.000	1.1	76.3	OK
ML2-22.016	ML2-17A	15 minute 5 year Winter I+20%	20.405	17.657	-0.248	0.000	0.41	1.083	1.1	79.2	OK
ML2-22.017	ML2-18	15 minute 5 year Winter I+20%	20.277	17.534	-0.243	0.000	0.43	1.090	1.2	81.8	OK
ML2-22.018	ML2-18A	15 minute 5 year Winter I+20%	20.158	17.353	-0.305	0.000	0.23	0.549	1.9	83.8	OK
ML2-21.020	ML2-19	15 minute 5 year Winter I+20%	20.089	17.181	-0.126	0.000	0.93	3.334	1.1	186.1	OK
ML2-21.021	ML2-20	15 minute 5 year Winter I+20%	20.216	17.135	-0.126	0.000	0.93	3.104	1.1	186.3	OK
ML2-23.000	ML2-21	15 minute 5 year Winter I+20%	20.002	19.934	-0.068	0.000	0.21	0.000	0.6	18.8	FLOOD RISK
ML2-23.001	ML2-22	15 minute 5 year Winter I+20%	19.729	18.179	-0.350	0.000	0.11	0.191	0.7	18.5	OK
ML2-21.022	ML2-23	15 minute 5 year Winter I+20%	20.103	16.987	-0.131	0.000	0.91	8.367	1.1	186.9	OK
ML2-21.023	ML2-24	30 minute 5 year Winter I+20%	19.682	16.731	-0.158	0.000	0.82	9.767	1.2	183.5	OK
ML2-4.006	ML2-FB	30 minute 5 year Winter I+20%	17.600	16.493	-0.507	0.000	0.40	206.432	2.1	564.9	OK
ML2-4.007	ML2-IB	1440 minute 5 year Winter I+20%	17.600	15.973	-1.027	0.000	0.00	2017.338	0.0	0.0	OK
ML2-24.000	ML2-95A	15 minute 5 year Summer I+20%	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	15 minute 5 year Summer I+20%	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	15 minute 5 year Summer I+20%	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

10 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	16	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Coarse DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	15 minute 10 year Winter I+40%	23.257	23.078	-0.180	0.000	0.02	0.000	1.0	19.8	FLOOD RISK
ML2-4.001	ML2-26	15 minute 10 year Winter I+40%	21.395	20.062	-0.133	0.000	0.34	0.076	1.7	25.8	OK
ML2-4.002	ML2-27	15 minute 10 year Winter I+40%	18.587	17.515	0.128	0.000	0.67	0.946	1.3	33.2	SURCHARGED
ML2-5.000	ML2-28	15 minute 10 year Winter I+40%	18.393	17.359	0.166	0.000	0.42	0.683	0.9	16.6	SURCHARGED
ML2-6.000	ML2-29	15 minute 10 year Winter I+40%	19.338	19.219	-0.119	0.000	0.15	0.000	0.3	36.9	FLOOD RISK
ML2-6.001	ML2-30	15 minute 10 year Winter I+40%	18.800	18.746	-0.054	0.000	0.43	2.040	0.3	74.2	FLOOD RISK
ML2-6.002	ML2-31	15 minute 10 year Winter I+40%	18.395	18.352	-0.043	0.000	0.56	4.743	0.3	91.4	FLOOD RISK
ML2-7.000	ML2-32	15 minute 10 year Winter I+40%	21.495	21.376	-0.119	0.000	0.14	0.000	0.5	56.2	FLOOD RISK
ML2-7.001	ML2-33	15 minute 10 year Winter I+40%	18.828	18.742	-0.086	0.000	0.30	0.385	0.4	78.7	FLOOD RISK
ML2-4.003	ML2-34	15 minute 10 year Winter I+40%	18.009	17.244	0.400	0.000	1.02	7.408	1.0	206.5	SURCHARGED
ML2-8.000	ML2-35	15 minute 10 year Winter I+40%	19.482	19.387	-0.095	0.000	0.23	0.000	0.2	40.3	FLOOD RISK
ML2-8.001	ML2-36	15 minute 10 year Winter I+40%	19.069	19.006	-0.063	0.000	0.41	3.451	0.3	64.8	FLOOD RISK
ML2-9.000	ML2-37	15 minute 10 year Winter I+40%	19.069	17.729	-0.140	0.000	0.30	0.141	1.1	14.8	OK
ML2-10.000	ML2-38	15 minute 10 year Winter I+40%	25.790	25.652	-0.138	0.000	0.09	0.000	0.5	39.3	FLOOD RISK
ML2-10.001	ML2-39	15 minute 10 year Winter I+40%	23.882	23.840	-0.156	0.000	0.06	0.091	1.3	71.8	FLOOD RISK
ML2-10.002	ML2-40	15 minute 10 year Winter I+40%	22.755	22.661	-0.094	0.000	0.24	0.225	0.6	108.1	FLOOD RISK
ML2-10.003	ML2-41	15 minute 10 year Winter I+40%	20.026	19.955	-0.071	0.000	0.38	0.439	0.5	128.8	FLOOD RISK
ML2-10.004	ML2-42	15 minute 10 year Winter I+40%	19.140	17.837	-0.178	0.000	0.53	0.340	2.2	126.6	OK
ML2-11.000	ML2-43	15 minute 10 year Winter I+40%	19.161	19.036	-0.125	0.000	0.14	0.000	0.3	30.9	FLOOD RISK
ML2-12.000	ML2-44	15 minute 10 year Winter I+40%	32.734	32.673	-0.061	0.000	0.37	0.000	0.2	44.8	FLOOD RISK
ML2-12.001	ML2-45	15 minute 10 year Winter I+40%	32.491	32.415	-0.076	0.000	0.32	5.177	0.3	63.6	FLOOD RISK
ML2-12.002	ML2-46	15 minute 10 year Winter I+40%	31.855	31.753	-0.102	0.000	0.21	1.014	0.4	56.7	FLOOD RISK
ML2-12.003	ML2-47	15 minute 10 year Winter I+40%	30.867	30.783	-0.084	0.000	0.27	0.834	0.4	81.7	FLOOD RISK
ML2-12.004	ML2-48	15 minute 10 year Winter I+40%	29.345	29.260	-0.085	0.000	0.28	0.696	0.6	103.5	FLOOD RISK
ML2-12.005	ML2-49	15 minute 10 year Winter I+40%	27.038	26.952	-0.086	0.000	0.27	0.426	0.6	104.7	FLOOD RISK
ML2-12.006	ML2-50	15 minute 10 year Winter I+40%	24.538	24.432	-0.106	0.000	0.21	0.254	0.6	98.6	FLOOD RISK
ML2-13.000	ML2-51	15 minute 10 year Winter I+40%	33.343	32.008	-0.135	0.000	0.31	0.074	0.9	12.0	OK
ML2-13.001	ML2-52	15 minute 10 year Winter I+40%	32.998	31.295	-0.084	0.000	0.66	0.377	1.1	25.7	OK
ML2-13.002	ML2-53	15 minute 10 year Winter I+40%	32.251	30.631	-0.047	0.000	0.92	0.556	1.3	41.2	OK
ML2-13.003	ML2-54	15 minute 10 year Winter I+40%	30.883	29.625	-0.057	0.000	0.88	0.431	1.7	53.5	OK
ML2-13.004	ML2-55	15 minute 10 year Winter I+40%	29.038	27.771	-0.067	0.000	0.81	0.291	2.1	60.3	OK
ML2-13.005	ML2-56	15 minute 10 year Winter I+40%	26.339	24.987	-0.152	0.000	0.46	0.181	2.6	85.8	OK
ML2-13.006	ML2-57	15 minute 10 year Winter I+40%	22.877	21.549	-0.128	0.000	0.77	0.296	1.1	86.2	OK
ML2-14.000	ML2-58	15 minute 10 year Winter I+40%	32.488	31.150	-0.138	0.000	0.30	0.145	0.9	12.5	OK
ML2-14.001	ML2-59	15 minute 10 year Winter I+40%	31.813	30.346	-0.169	0.000	0.39	0.262	1.4	39.8	OK
ML2-15.000	ML2-60	15 minute 10 year Winter I+40%	33.070	31.686	-0.184	0.000	0.07	0.031	0.6	2.8	OK
ML2-15.001	ML2-61	15 minute 10 year Winter I+40%	32.797	30.892	-0.159	0.000	0.17	0.120	0.8	6.7	OK
ML2-15.002	ML2-62	15 minute 10 year Winter I+40%	32.016	30.122	-0.147	0.000	0.25	0.148	0.8	9.8	OK
ML2-15.003	ML2-63	15 minute 10 year Winter I+40%	31.129	29.570	-0.149	0.000	0.25	0.126	0.8	9.7	OK
ML2-14.002	ML2-64	15 minute 10 year Winter I+40%	30.823	29.470	-0.153	0.000	0.48	0.511	1.7	59.4	OK
ML2-14.003	ML2-65	15 minute 10 year Winter I+40%	29.153	27.803	-0.151	0.000	0.49	0.397	2.0	69.1	OK
ML2-14.004	ML2-66	15 minute 10 year Winter I+40%	27.003	25.654	-0.149	0.000	0.50	0.369	2.2	79.3	OK
ML2-14.005	ML2-67	15 minute 10 year Winter I+40%	24.331	22.876	-0.255	0.000	0.22	0.212	2.9	87.4	OK
ML2-12.007	ML2-68	15 minute 10 year Winter I+40%	23.554	21.455	-0.138	0.000	0.82	1.612	2.2	258.1	OK
ML2-12.008	ML2-69	15 minute 10 year Winter I+40%	22.270	20.857	-0.213	0.000	0.55	1.046	3.1	259.7	OK
ML2-12.009	ML2-70	15 minute 10 year Winter I+40%	20.109	18.736	-0.173	0.000	0.69	0.783	2.6	260.3	OK
ML2-12.010	ML2-71	15 minute 10 year Winter I+40%	19.243	18.053	0.010	0.000	1.02	2.362	1.8	256.0	SURCHARGED
ML2-12.011	ML2-72	15 minute 10 year Winter I+40%	18.761	17.368	-0.193	0.000	0.50	1.608	3.3	259.9	OK
ML2-4.004	ML2-73	15 minute 10 year Winter I+40%	18.669	17.182	0.098	0.000	1.33	12.615	1.2	649.4	SURCHARGED
ML2-16.000	ML2-74	15 minute 10 year Winter I+40%	32.290	32.229	-0.061	0.000	0.38	0.000	0.2	48.4	FLOOD RISK
ML2-16.001	ML2-75	15 minute 10 year Winter I+40%	32.023	31.952	-0.071	0.000	0.34	5.255	0.3	72.7	FLOOD RISK
ML2-16.002	ML2-76	15 minute 10 year Winter I+40%	31.273	31.208	-0.065	0.000	0.36	2.115	0.4	93.6	FLOOD RISK
ML2-16.003	ML2-77	15 minute 10 year Winter I+40%	30.129	30.045	-0.084	0.000	0.30	0.961	0.5	99.8	FLOOD RISK
ML2-16.004	ML2-78	15 minute 10 year Winter I+40%	29.097	29.013	-0.084	0.000	0.30	0.583	0.5	107.3	FLOOD RISK
ML2-16.005	ML2-79	15 minute 10 year Winter I+40%	27.557	27.490	-0.067	0.000	0.37	0.707	0.5	111.9	FLOOD RISK
ML2-16.006	ML2-80	15 minute 10 year Winter I+40%	26.520	26.434	-0.086	0.000	0.30	0.761	0.5	109.0	FLOOD RISK*

10 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-17.000	ML2-RE	15 minute 10 year Summer I+40%	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	15 minute 10 year Summer I+40%	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	15 minute 10 year Summer I+40%	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	15 minute 10 year Summer I+40%	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	15 minute 10 year Summer I+40%	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	15 minute 10 year Summer I+40%	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	15 minute 10 year Winter I+40%	32.018	30.519	-0.299	0.000	0.09	0.125	0.9	13.6	OK
ML2-19.001	ML2-86	15 minute 10 year Winter I+40%	31.277	29.796	-0.281	0.000	0.14	0.263	1.3	27.6	OK
ML2-19.002	ML2-87	15 minute 10 year Winter I+40%	29.959	28.489	-0.269	0.000	0.18	0.252	1.5	39.1	OK
ML2-18.002	ML2-88	15 minute 10 year Winter I+40%	28.947	27.488	-0.259	0.000	0.21	0.277	1.7	50.4	OK
ML2-18.003	ML2-89	15 minute 10 year Winter I+40%	27.560	26.107	-0.253	0.000	0.23	0.287	1.6	50.3	OK
ML2-17.004	ML2-82	15 minute 10 year Winter I+40%	27.017	25.524	-0.236	0.000	0.30	0.366	1.7	63.7	OK
ML2-17.005	ML2-90	15 minute 10 year Winter I+40%	26.359	24.925	-0.234	0.000	0.30	0.376	2.0	74.7	OK
ML2-16.007	ML2-91	15 minute 10 year Winter I+40%	24.761	23.275	-0.161	0.000	0.62	0.642	2.8	183.6	OK
ML2-16.008	ML2-92	15 minute 10 year Winter I+40%	23.496	22.058	-0.167	0.000	0.59	0.494	2.9	184.3	OK
ML2-16.009	ML2-93	15 minute 10 year Winter I+40%	20.639	19.298	-0.141	0.000	0.71	0.546	2.6	185.8	OK
ML2-20.000	ML2-94A	15 minute 10 year Winter I+40%	19.700	18.330	-0.170	0.000	0.13	0.057	1.0	7.2	OK
ML2-4.005	ML2-94	15 minute 10 year Winter I+40%	19.418	17.111	0.068	0.000	1.36	10.578	1.5	821.9	SURCHARGED
ML2-21.000	ML2-01A	15 minute 10 year Winter I+40%	22.195	19.535	-0.160	0.000	0.27	0.011	0.8	11.9	OK
ML2-21.001	ML2-01	15 minute 10 year Winter I+40%	22.094	19.477	-0.117	0.000	0.54	0.292	0.9	23.5	OK
ML2-21.002	ML2-01B	15 minute 10 year Winter I+40%	21.986	19.414	-0.072	0.000	0.84	0.526	1.0	36.5	OK
ML2-21.003	ML2-02	15 minute 10 year Winter I+40%	21.881	19.199	-0.182	0.000	0.45	0.116	1.1	47.8	OK
ML2-21.004	ML2-02A	15 minute 10 year Winter I+40%	21.720	19.071	-0.149	0.000	0.62	0.937	1.1	64.9	OK
ML2-21.005	ML2-03	15 minute 10 year Winter I+40%	21.583	18.962	-0.121	0.000	0.75	1.149	1.2	78.2	OK
ML2-21.006	ML2-03A	15 minute 10 year Winter I+40%	21.442	18.870	-0.072	0.000	0.86	1.617	1.2	88.7	OK
ML2-21.007	ML2-04	15 minute 10 year Winter I+40%	21.312	18.783	-0.029	0.000	0.93	1.882	1.2	96.4	OK
ML2-21.008	ML2-04A	15 minute 10 year Winter I+40%	21.173	18.672	-0.001	0.000	1.00	2.176	1.2	103.9	OK
ML2-21.009	ML2-05	30 minute 10 year Winter I+40%	21.045	18.570	0.025	0.000	0.52	2.178	1.2	102.4	SURCHARGED
ML2-21.010	ML2-05A	30 minute 10 year Winter I+40%	20.904	18.507	0.103	0.000	0.57	4.367	1.3	111.5	SURCHARGED
ML2-21.011	ML2-06	30 minute 10 year Winter I+40%	20.773	18.378	0.105	0.000	0.60	4.001	1.3	116.1	SURCHARGED
ML2-21.012	ML2-06A	30 minute 10 year Winter I+40%	20.632	18.261	0.129	0.000	0.62	4.435	1.3	119.8	SURCHARGED
ML2-21.013	ML2-07	30 minute 10 year Winter I+40%	20.504	18.139	0.135	0.000	0.65	4.046	1.3	125.7	SURCHARGED
ML2-21.014	ML2-07A	15 minute 10 year Winter I+40%	20.363	18.036	0.173	0.000	0.70	4.478	1.3	135.0	SURCHARGED
ML2-21.015	ML2-08	15 minute 10 year Winter I+40%	20.235	17.917	0.182	0.000	0.67	4.086	1.3	131.5	SURCHARGED
ML2-21.016	ML2-08A	30 minute 10 year Winter I+40%	20.094	17.814	0.220	0.000	0.66	4.475	1.3	127.7	SURCHARGED
ML2-21.017	ML2-09	30 minute 10 year Winter I+40%	19.966	17.707	0.241	0.000	0.62	4.077	1.1	118.0	SURCHARGED
ML2-21.018	ML2-09A	30 minute 10 year Winter I+40%	19.846	17.602	0.256	0.000	0.74	3.825	0.9	124.6	SURCHARGED
ML2-21.019	ML2-10	30 minute 10 year Winter I+40%	19.762	17.501	0.239	0.000	1.23	3.879	0.8	125.4	SURCHARGED
ML2-22.000	ML2-11D	15 minute 10 year Winter I+40%	22.500	19.827	-0.173	0.000	0.20	0.008	0.7	8.7	OK
ML2-22.001	ML2-11C	15 minute 10 year Winter I+40%	22.403	19.762	-0.141	0.000	0.39	0.186	0.8	17.0	OK
ML2-22.002	ML2-11B	15 minute 10 year Winter I+40%	22.293	19.686	-0.107	0.000	0.61	0.349	0.9	26.3	OK
ML2-22.003	ML2-11	15 minute 10 year Winter I+40%	22.189	19.605	-0.084	0.000	0.77	0.460	1.0	34.5	OK
ML2-22.004	ML2-11A	15 minute 10 year Winter I+40%	22.028	19.345	-0.183	0.000	0.45	0.112	1.1	46.7	OK
ML2-22.005	ML2-12	15 minute 10 year Winter I+40%	21.888	19.222	-0.166	0.000	0.54	0.769	1.1	56.1	OK
ML2-22.006	ML2-12A	15 minute 10 year Winter I+40%	21.746	19.104	-0.142	0.000	0.65	0.956	1.1	65.5	OK
ML2-22.007	ML2-13	15 minute 10 year Winter I+40%	21.621	18.991	-0.130	0.000	0.71	1.056	1.2	74.5	OK
ML2-22.008	ML2-13A	15 minute 10 year Winter I+40%	21.479	18.866	-0.113	0.000	0.80	1.225	1.2	82.0	OK
ML2-22.009	ML2-14	15 minute 10 year Winter I+40%	21.350	18.753	-0.097	0.000	0.86	1.332	1.2	88.5	OK
ML2-22.010	ML2-14A	15 minute 10 year Winter I+40%	21.214	18.626	-0.088	0.000	0.91	1.483	1.2	95.0	OK
ML2-22.011	ML2-15	15 minute 10 year Winter I+40%	21.075	18.506	-0.069	0.000	0.93	1.611	1.2	98.4	OK
ML2-22.012	ML2-15A	15 minute 10 year Winter I+40%	20.932	18.386	-0.046	0.000	1.00	1.844	1.2	101.2	OK
ML2-22.013	ML2-16	15 minute 10 year Winter I+40%	20.814	18.098	-0.216	0.000	0.53	0.413	1.3	105.1	OK
ML2-22.014	ML2-16A	15 minute 10 year Winter I+40%	20.669	17.964	-0.205	0.000	0.57	1.552	1.2	109.5	OK
ML2-22.015	ML2-17	15 minute 10 year Winter I+40%	20.542	17.842	-0.200	0.000	0.59	1.564	1.3	113.6	OK
ML2-22.016	ML2-17A	15 minute 10 year Winter I+40%	20.405	17.710	-0.195	0.000	0.61	1.712	1.3	116.9	OK
ML2-22.017	ML2-18	15 minute 10 year Winter I+40%	20.277	17.600	-0.177	0.000	0.63	1.833	1.3	119.8	OK
ML2-22.018	ML2-18A	30 minute 10 year Winter I+40%	20.158	17.543	-0.115	0.000	0.31	2.369	2.0	115.9	OK
ML2-21.020	ML2-19	30 minute 10 year Winter I+40%	20.089	17.463	0.156	0.000	1.17	5.400	1.1	235.0	SURCHARGED
ML2-21.021	ML2-20	30 minute 10 year Winter I+40%	20.216	17.397	0.136	0.000	1.17	4.798	1.1	234.8	SURCHARGED
ML2-23.000	ML2-21	15 minute 10 year Winter I+40%	20.002	19.947	-0.055	0.000	0.30	0.000	0.6	27.5	FLOOD RISK
ML2-23.001	ML2-22	15 minute 10 year Winter I+40%	19.729	18.200	-0.329	0.000	0.16	0.234	0.8	27.1	OK
ML2-21.022	ML2-23	15 minute 10 year Winter I+40%	20.103	17.203	0.086	0.000	1.16	13.086	1.1	240.3	SURCHARGED
ML2-21.023	ML2-24	30 minute 10 year Winter I+40%	19.682	16.899	0.011	0.000	1.03	16.966	1.2	229.0	SURCHARGED
ML2-4.006	ML2-FB	30 minute 10 year Winter I+40%	17.600	16.596	-0.404	0.000	0.59	271.085	2.3	835.6	OK
ML2-4.007	ML2-IB	1440 minute 10 year Winter I+40%	17.600	16.138	-0.862	0.000	0.00	2952.548	0.0	0.0	OK
ML2-24.000	ML2-95A	15 minute 10 year Summer I+40%	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	15 minute 10 year Summer I+40%	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	15 minute 10 year Summer I+40%	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	16	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Coarse DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	15 minute 30 year Winter I+40%	23.257	23.081	-0.177	0.000	0.02	0.000	1.0	26.3	FLOOD RISK
ML2-4.001	ML2-26	15 minute 30 year Winter I+40%	21.395	20.078	-0.117	0.000	0.46	0.090	1.9	34.4	OK
ML2-4.002	ML2-27	15 minute 30 year Winter I+40%	18.587	17.999	0.612	0.000	0.75	2.480	1.3	37.5	SURCHARGED
ML2-5.000	ML2-28	15 minute 30 year Winter I+40%	18.393	17.689	0.496	0.000	0.51	1.266	0.9	19.9	SURCHARGED
ML2-6.000	ML2-29	15 minute 30 year Winter I+40%	19.338	19.233	-0.105	0.000	0.20	0.000	0.3	49.2	FLOOD RISK
ML2-6.001	ML2-30	15 minute 30 year Winter I+40%	18.800	18.766	-0.034	0.000	0.58	2.658	0.3	99.4	FLOOD RISK
ML2-6.002	ML2-31	15 minute 30 year Winter I+40%	18.395	18.377	-0.018	0.000	0.77	6.321	0.3	125.8	FLOOD RISK
ML2-7.000	ML2-32	15 minute 30 year Winter I+40%	21.495	21.390	-0.105	0.000	0.19	0.000	0.5	74.9	FLOOD RISK
ML2-7.001	ML2-33	15 minute 30 year Winter I+40%	18.828	18.763	-0.065	0.000	0.40	0.626	0.4	105.2	FLOOD RISK
ML2-4.003	ML2-34	15 minute 30 year Winter I+40%	18.009	17.520	0.676	0.000	1.37	8.050	1.3	276.2	SURCHARGED
ML2-8.000	ML2-35	15 minute 30 year Winter I+40%	19.482	19.405	-0.077	0.000	0.31	0.000	0.3	53.7	FLOOD RISK
ML2-8.001	ML2-36	15 minute 30 year Winter I+40%	19.069	19.027	-0.042	0.000	0.57	4.742	0.3	90.8	FLOOD RISK
ML2-9.000	ML2-37	15 minute 30 year Winter I+40%	19.069	17.739	-0.130	0.000	0.36	0.160	1.2	18.1	OK
ML2-10.000	ML2-38	15 minute 30 year Winter I+40%	25.790	25.661	-0.129	0.000	0.12	0.000	0.5	52.4	FLOOD RISK
ML2-10.001	ML2-39	15 minute 30 year Winter I+40%	23.882	23.849	-0.147	0.000	0.08	0.111	1.5	95.7	FLOOD RISK
ML2-10.002	ML2-40	15 minute 30 year Winter I+40%	22.755	22.679	-0.076	0.000	0.32	0.374	0.7	143.9	FLOOD RISK
ML2-10.003	ML2-41	15 minute 30 year Winter I+40%	20.026	19.975	-0.051	0.000	0.50	0.620	0.6	171.7	FLOOD RISK
ML2-10.004	ML2-42	15 minute 30 year Winter I+40%	19.140	17.917	-0.098	0.000	0.70	0.480	2.3	167.7	OK
ML2-11.000	ML2-43	15 minute 30 year Winter I+40%	19.161	19.049	-0.112	0.000	0.18	0.000	0.3	41.1	FLOOD RISK
ML2-12.000	ML2-44	15 minute 30 year Winter I+40%	32.734	32.691	-0.043	0.000	0.49	0.000	0.2	59.7	FLOOD RISK
ML2-12.001	ML2-45	15 minute 30 year Winter I+40%	32.491	32.436	-0.055	0.000	0.42	7.821	0.3	83.9	FLOOD RISK
ML2-12.002	ML2-46	15 minute 30 year Winter I+40%	31.855	31.767	-0.088	0.000	0.27	1.426	0.4	75.7	FLOOD RISK
ML2-12.003	ML2-47	15 minute 30 year Winter I+40%	30.867	30.804	-0.063	0.000	0.36	1.344	0.5	108.6	FLOOD RISK
ML2-12.004	ML2-48	15 minute 30 year Winter I+40%	29.345	29.281	-0.064	0.000	0.37	1.127	0.6	138.1	FLOOD RISK
ML2-12.005	ML2-49	15 minute 30 year Winter I+40%	27.038	26.972	-0.066	0.000	0.36	0.694	0.6	139.7	FLOOD RISK
ML2-12.006	ML2-50	15 minute 30 year Winter I+40%	24.538	24.447	-0.091	0.000	0.28	0.340	0.7	131.6	FLOOD RISK
ML2-13.000	ML2-51	15 minute 30 year Winter I+40%	33.343	32.024	-0.119	0.000	0.41	0.087	1.0	16.0	OK
ML2-13.001	ML2-52	15 minute 30 year Winter I+40%	32.998	31.359	-0.019	0.000	0.84	0.681	1.1	32.6	OK
ML2-13.002	ML2-53	15 minute 30 year Winter I+40%	32.251	30.903	0.225	0.000	1.08	2.232	1.3	48.1	SURCHARGED
ML2-13.003	ML2-54	15 minute 30 year Winter I+40%	30.883	29.729	0.047	0.000	1.01	0.912	1.8	61.8	SURCHARGED
ML2-13.004	ML2-55	15 minute 30 year Winter I+40%	29.038	27.794	-0.044	0.000	0.97	0.351	2.2	72.7	OK
ML2-13.005	ML2-56	15 minute 30 year Winter I+40%	26.339	25.013	-0.126	0.000	0.61	0.221	2.7	113.0	OK
ML2-13.006	ML2-57	15 minute 30 year Winter I+40%	22.877	21.701	0.024	0.000	1.00	0.658	1.2	111.8	SURCHARGED
ML2-14.000	ML2-58	15 minute 30 year Winter I+40%	32.488	31.162	-0.126	0.000	0.39	0.166	1.0	15.8	OK
ML2-14.001	ML2-59	15 minute 30 year Winter I+40%	31.813	30.365	-0.150	0.000	0.49	0.321	1.4	49.9	OK
ML2-15.000	ML2-60	15 minute 30 year Winter I+40%	33.070	31.692	-0.178	0.000	0.09	0.037	0.7	3.8	OK
ML2-15.001	ML2-61	15 minute 30 year Winter I+40%	32.797	30.902	-0.149	0.000	0.22	0.141	0.8	8.9	OK
ML2-15.002	ML2-62	15 minute 30 year Winter I+40%	32.016	30.136	-0.133	0.000	0.34	0.176	0.9	13.1	OK
ML2-15.003	ML2-63	15 minute 30 year Winter I+40%	31.129	29.583	-0.136	0.000	0.33	0.150	0.9	13.0	OK
ML2-14.002	ML2-64	15 minute 30 year Winter I+40%	30.823	29.492	-0.132	0.000	0.60	0.645	1.8	75.1	OK
ML2-14.003	ML2-65	15 minute 30 year Winter I+40%	29.153	27.826	-0.128	0.000	0.62	0.484	2.1	87.3	OK
ML2-14.004	ML2-66	15 minute 30 year Winter I+40%	27.003	25.678	-0.125	0.000	0.64	0.449	2.4	100.7	OK
ML2-14.005	ML2-67	15 minute 30 year Winter I+40%	24.331	22.892	-0.239	0.000	0.29	0.249	3.1	111.3	OK
ML2-12.007	ML2-68	15 minute 30 year Winter I+40%	23.554	21.618	0.025	0.000	1.04	2.949	2.3	327.9	SURCHARGED
ML2-12.008	ML2-69	15 minute 30 year Winter I+40%	22.270	20.897	-0.173	0.000	0.69	1.394	3.2	328.6	OK
ML2-12.009	ML2-70	15 minute 30 year Winter I+40%	20.109	19.171	0.262	0.000	0.86	3.463	2.6	326.4	SURCHARGED
ML2-12.010	ML2-71	15 minute 30 year Winter I+40%	19.243	18.517	0.474	0.000	1.34	6.435	2.1	335.0	SURCHARGED
ML2-12.011	ML2-72	15 minute 30 year Winter I+40%	18.761	17.756	0.195	0.000	0.68	8.054	3.3	352.9	SURCHARGED
ML2-4.004	ML2-73	15 minute 30 year Winter I+40%	18.669	17.412	0.328	0.000	1.63	15.476	1.5	795.5	SURCHARGED
ML2-16.000	ML2-74	15 minute 30 year Winter I+40%	32.290	32.246	-0.044	0.000	0.50	0.000	0.2	64.4	FLOOD RISK
ML2-16.001	ML2-75	15 minute 30 year Winter I+40%	32.023	31.974	-0.049	0.000	0.45	7.666	0.4	97.3	FLOOD RISK
ML2-16.002	ML2-76	15 minute 30 year Winter I+40%	31.273	31.227	-0.046	0.000	0.48	2.866	0.4	124.8	FLOOD RISK
ML2-16.003	ML2-77	15 minute 30 year Winter I+40%	30.129	30.066	-0.063	0.000	0.41	1.545	0.5	133.2	FLOOD RISK
ML2-16.004	ML2-78	15 minute 30 year Winter I+40%	29.097	29.033	-0.064	0.000	0.39	0.930	0.6	142.5	FLOOD RISK
ML2-16.005	ML2-79	15 minute 30 year Winter I+40%	27.557	27.509	-0.048	0.000	0.50	0.978	0.5	149.3	FLOOD RISK
ML2-16.006	ML2-80	15 minute 30 year Winter I+40%	26.520	26.454	-0.066	0.000	0.40	1.195	0.6	145.9	FLOOD RISK*

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-17.000	ML2-RE	15 minute 30 year Summer I+40%	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	15 minute 30 year Summer I+40%	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	15 minute 30 year Summer I+40%	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	15 minute 30 year Summer I+40%	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	15 minute 30 year Summer I+40%	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	15 minute 30 year Summer I+40%	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	15 minute 30 year Winter I+40%	32.018	30.527	-0.291	0.000	0.11	0.139	0.9	17.1	OK
ML2-19.001	ML2-86	15 minute 30 year Winter I+40%	31.277	29.807	-0.270	0.000	0.17	0.299	1.4	34.1	OK
ML2-19.002	ML2-87	15 minute 30 year Winter I+40%	29.959	28.502	-0.256	0.000	0.22	0.319	1.6	49.1	OK
ML2-18.002	ML2-88	15 minute 30 year Winter I+40%	28.947	27.503	-0.244	0.000	0.26	0.339	1.9	63.7	OK
ML2-18.003	ML2-89	15 minute 30 year Winter I+40%	27.560	26.123	-0.237	0.000	0.29	0.347	1.7	63.5	OK
ML2-17.004	ML2-82	15 minute 30 year Winter I+40%	27.017	25.544	-0.216	0.000	0.37	0.444	1.8	80.2	OK
ML2-17.005	ML2-90	15 minute 30 year Winter I+40%	26.359	24.945	-0.214	0.000	0.38	0.456	2.1	94.5	OK
ML2-16.007	ML2-91	15 minute 30 year Winter I+40%	24.761	23.318	-0.118	0.000	0.81	0.876	3.0	240.1	OK
ML2-16.008	ML2-92	15 minute 30 year Winter I+40%	23.496	22.100	-0.125	0.000	0.77	0.675	3.1	241.3	OK
ML2-16.009	ML2-93	15 minute 30 year Winter I+40%	20.639	19.348	-0.091	0.000	0.92	0.732	2.7	243.0	OK
ML2-20.000	ML2-94A	15 minute 30 year Winter I+40%	19.700	18.339	-0.161	0.000	0.18	0.067	1.0	9.6	OK
ML2-4.005	ML2-94	15 minute 30 year Winter I+40%	19.418	17.238	0.195	0.000	1.71	12.076	1.9	1035.1	SURCHARGED
ML2-21.000	ML2-01A	30 minute 30 year Winter I+40%	22.195	20.638	0.943	0.000	0.36	0.160	0.8	15.7	SURCHARGED
ML2-21.001	ML2-01	30 minute 30 year Winter I+40%	22.094	20.526	0.932	0.000	0.59	1.120	0.9	25.8	SURCHARGED
ML2-21.002	ML2-01B	30 minute 30 year Summer I+40%	21.986	20.374	0.888	0.000	0.96	1.197	1.0	41.8	SURCHARGED
ML2-21.003	ML2-02	30 minute 30 year Winter I+40%	21.881	20.355	0.974	0.000	0.46	1.188	1.1	48.9	SURCHARGED
ML2-21.004	ML2-02A	30 minute 30 year Winter I+40%	21.720	20.392	1.172	0.000	0.61	3.243	1.1	63.2	SURCHARGED
ML2-21.005	ML2-03	30 minute 30 year Winter I+40%	21.583	20.439	1.356	0.000	0.77	2.815	1.2	80.1	SURCHARGED
ML2-21.006	ML2-03A	15 minute 30 year Winter I+40%	21.442	19.686	0.744	0.000	0.96	2.800	1.2	98.9	SURCHARGED
ML2-21.007	ML2-04	15 minute 30 year Winter I+40%	21.312	19.652	0.840	0.000	1.06	2.618	1.2	109.9	SURCHARGED
ML2-21.008	ML2-04A	15 minute 30 year Winter I+40%	21.173	19.536	0.863	0.000	1.17	2.810	1.3	121.4	SURCHARGED
ML2-21.009	ML2-05	15 minute 30 year Winter I+40%	21.045	19.427	0.882	0.000	0.65	2.568	1.3	127.6	SURCHARGED
ML2-21.010	ML2-05A	30 minute 30 year Winter I+40%	20.904	18.994	0.590	0.000	0.59	4.519	1.3	115.6	SURCHARGED
ML2-21.011	ML2-06	30 minute 30 year Winter I+40%	20.773	18.972	0.699	0.000	0.64	4.145	1.3	123.7	SURCHARGED
ML2-21.012	ML2-06A	30 minute 30 year Summer I+40%	20.632	18.857	0.725	0.000	0.72	4.561	1.3	137.6	SURCHARGED
ML2-21.013	ML2-07	15 minute 30 year Winter I+40%	20.504	18.651	0.647	0.000	0.85	4.139	1.3	164.7	SURCHARGED
ML2-21.014	ML2-07A	30 minute 30 year Winter I+40%	20.363	18.517	0.654	0.000	0.77	4.544	1.3	147.3	SURCHARGED
ML2-21.015	ML2-08	30 minute 30 year Winter I+40%	20.235	18.394	0.659	0.000	0.76	4.152	1.3	148.2	SURCHARGED
ML2-21.016	ML2-08A	30 minute 30 year Winter I+40%	20.094	18.230	0.636	0.000	0.86	4.532	1.3	164.3	SURCHARGED
ML2-21.017	ML2-09	30 minute 30 year Winter I+40%	19.966	18.114	0.648	0.000	0.90	4.133	1.1	171.3	SURCHARGED
ML2-21.018	ML2-09A	15 minute 30 year Winter I+40%	19.846	18.010	0.664	0.000	1.10	3.866	1.2	185.3	SURCHARGED
ML2-21.019	ML2-10	15 minute 30 year Winter I+40%	19.762	17.931	0.669	0.000	1.79	5.368	1.2	182.2	SURCHARGED
ML2-22.000	ML2-11D	15 minute 30 year Winter I+40%	22.500	19.839	-0.161	0.000	0.27	0.010	0.8	11.5	OK
ML2-22.001	ML2-11C	15 minute 30 year Winter I+40%	22.403	19.782	-0.121	0.000	0.51	0.278	0.9	22.4	OK
ML2-22.002	ML2-11B	15 minute 30 year Winter I+40%	22.293	19.717	-0.076	0.000	0.81	0.502	1.0	34.8	OK
ML2-22.003	ML2-11	15 minute 30 year Winter I+40%	22.189	19.649	-0.040	0.000	1.00	0.666	1.1	45.0	OK
ML2-22.004	ML2-11A	15 minute 30 year Winter I+40%	22.028	19.435	-0.093	0.000	0.59	0.482	1.1	61.6	OK
ML2-22.005	ML2-12	15 minute 30 year Winter I+40%	21.888	19.451	0.063	0.000	0.71	2.548	1.2	74.2	SURCHARGED
ML2-22.006	ML2-12A	15 minute 30 year Winter I+40%	21.746	19.289	0.043	0.000	0.84	2.472	1.2	85.3	SURCHARGED
ML2-22.007	ML2-13	30 minute 30 year Winter I+40%	21.621	19.176	0.055	0.000	0.76	2.398	1.2	80.1	SURCHARGED
ML2-22.008	ML2-13A	15 minute 30 year Winter I+40%	21.479	19.066	0.087	0.000	0.92	2.606	1.2	94.4	SURCHARGED
ML2-22.009	ML2-14	15 minute 30 year Winter I+40%	21.350	18.983	0.133	0.000	0.98	2.494	1.2	100.6	SURCHARGED
ML2-22.010	ML2-14A	15 minute 30 year Winter I+40%	21.214	18.938	0.224	0.000	1.03	2.721	1.2	108.1	SURCHARGED
ML2-22.011	ML2-15	15 minute 30 year Winter I+40%	21.075	18.875	0.300	0.000	1.09	2.671	1.2	114.5	SURCHARGED
ML2-22.012	ML2-15A	15 minute 30 year Winter I+40%	20.932	18.763	0.331	0.000	1.19	2.736	1.3	120.6	SURCHARGED
ML2-22.013	ML2-16	15 minute 30 year Winter I+40%	20.814	18.653	0.339	0.000	0.63	2.375	1.3	124.8	SURCHARGED
ML2-22.014	ML2-16A	30 minute 30 year Winter I+40%	20.669	18.499	0.330	0.000	0.67	4.483	1.3	127.1	SURCHARGED
ML2-22.015	ML2-17	30 minute 30 year Winter I+40%	20.542	18.398	0.356	0.000	0.68	4.104	1.3	131.5	SURCHARGED
ML2-22.016	ML2-17A	30 minute 30 year Winter I+40%	20.405	18.268	0.363	0.000	0.69	4.486	1.3	131.9	SURCHARGED
ML2-22.017	ML2-18	15 minute 30 year Winter I+40%	20.277	18.191	0.414	0.000	0.69	4.157	1.3	129.9	SURCHARGED
ML2-22.018	ML2-18A	15 minute 30 year Winter I+40%	20.158	18.092	0.434	0.000	0.37	3.853	2.1	134.5	SURCHARGED
ML2-21.020	ML2-19	15 minute 30 year Winter I+40%	20.089	17.886	0.579	0.000	1.45	7.009	1.4	291.7	SURCHARGED
ML2-21.021	ML2-20	15 minute 30 year Winter I+40%	20.216	17.781	0.520	0.000	1.44	6.131	1.3	288.3	SURCHARGED
ML2-23.000	ML2-21	15 minute 30 year Winter I+40%	20.002	19.958	-0.044	0.000	0.40	0.000	0.7	36.7	FLOOD RISK
ML2-23.001	ML2-22	15 minute 30 year Winter I+40%	19.729	18.221	-0.308	0.000	0.21	0.276	0.9	36.1	OK
ML2-21.022	ML2-23	30 minute 30 year Winter I+40%	20.103	17.505	0.388	0.000	1.37	14.018	1.3	283.6	SURCHARGED
ML2-21.023	ML2-24	30 minute 30 year Winter I+40%	19.682	17.101	0.213	0.000	1.22	20.745	1.3	272.6	SURCHARGED
ML2-4.006	ML2-FB	30 minute 30 year Winter I+40%	17.600	16.694	-0.306	0.000	0.77	333.888	2.5	1094.0	OK
ML2-4.007	ML2-IB	2160 minute 30 year Winter I+40%	17.600	16.317	-0.683	0.000	0.00	3995.348	0.0	0.0	OK
ML2-24.000	ML2-95A	15 minute 30 year Summer I+40%	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	15 minute 30 year Summer I+40%	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	15 minute 30 year Summer I+40%	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	16	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Coarse DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	15 minute 100 year Winter I+45%	23.257	23.085	-0.173	0.000	0.03	0.000	1.1	35.5	FLOOD RISK
ML2-4.001	ML2-26	15 minute 100 year Winter I+45%	21.395	20.100	-0.095	0.000	0.61	0.108	2.0	46.2	OK
ML2-4.002	ML2-27	15 minute 100 year Winter I+45%	18.587	18.588	1.201	0.487	0.95	4.816	1.3	47.2	FLOOD
ML2-5.000	ML2-28	15 minute 100 year Winter I+45%	18.393	18.118	0.925	0.000	0.56	2.024	0.9	22.2	FLOOD RISK
ML2-6.000	ML2-29	15 minute 100 year Winter I+45%	19.338	19.249	-0.089	0.000	0.27	0.000	0.4	66.3	FLOOD RISK
ML2-6.001	ML2-30	15 minute 100 year Winter I+45%	18.800	18.790	-0.010	0.000	0.79	3.402	0.3	134.3	FLOOD RISK
ML2-6.002	ML2-31	15 minute 100 year Winter I+45%	18.395	18.397	0.002	2.048	1.01	9.480	0.3	165.8	FLOOD
ML2-7.000	ML2-32	15 minute 100 year Winter I+45%	21.495	21.406	-0.089	0.000	0.26	0.000	0.6	101.2	FLOOD RISK
ML2-7.001	ML2-33	15 minute 100 year Winter I+45%	18.828	18.784	-0.044	0.000	0.54	0.872	0.4	144.1	FLOOD RISK
ML2-4.003	ML2-34	15 minute 100 year Winter I+45%	18.009	17.919	1.075	0.000	1.68	11.410	1.6	339.4	FLOOD RISK
ML2-8.000	ML2-35	15 minute 100 year Winter I+45%	19.482	19.426	-0.056	0.000	0.42	0.000	0.3	72.5	FLOOD RISK
ML2-8.001	ML2-36	15 minute 100 year Winter I+45%	19.069	19.053	-0.016	0.000	0.80	6.330	0.3	126.8	FLOOD RISK
ML2-9.000	ML2-37	15 minute 100 year Winter I+45%	19.069	17.868	-0.001	0.000	0.43	0.388	1.2	21.5	OK
ML2-10.000	ML2-38	15 minute 100 year Winter I+45%	25.790	25.673	-0.117	0.000	0.16	0.000	0.6	70.7	FLOOD RISK
ML2-10.001	ML2-39	15 minute 100 year Winter I+45%	23.882	23.859	-0.137	0.000	0.11	0.135	1.6	129.2	FLOOD RISK
ML2-10.002	ML2-40	15 minute 100 year Winter I+45%	22.755	22.701	-0.054	0.000	0.43	0.551	0.7	194.2	FLOOD RISK
ML2-10.003	ML2-41	15 minute 100 year Winter I+45%	20.026	19.996	-0.030	0.000	0.67	0.814	0.6	231.7	FLOOD RISK
ML2-10.004	ML2-42	15 minute 100 year Winter I+45%	19.140	18.639	0.624	0.000	0.95	1.756	2.3	225.2	SURCHARGED
ML2-11.000	ML2-43	15 minute 100 year Winter I+45%	19.161	19.065	-0.096	0.000	0.25	0.000	0.3	55.5	FLOOD RISK
ML2-12.000	ML2-44	15 minute 100 year Winter I+45%	32.734	32.714	-0.020	0.000	0.66	0.000	0.2	80.5	FLOOD RISK
ML2-12.001	ML2-45	15 minute 100 year Winter I+45%	32.491	32.459	-0.032	0.000	0.59	10.724	0.4	117.3	FLOOD RISK
ML2-12.002	ML2-46	15 minute 100 year Winter I+45%	31.855	31.791	-0.064	0.000	0.39	2.536	0.4	106.4	FLOOD RISK
ML2-12.003	ML2-47	15 minute 100 year Winter I+45%	30.867	30.824	-0.043	0.000	0.49	1.814	0.5	147.5	FLOOD RISK
ML2-12.004	ML2-48	15 minute 100 year Winter I+45%	29.345	29.302	-0.043	0.000	0.51	1.554	0.6	188.6	FLOOD RISK
ML2-12.005	ML2-49	15 minute 100 year Winter I+45%	27.038	26.993	-0.045	0.000	0.50	0.981	0.7	191.8	FLOOD RISK
ML2-12.006	ML2-50	15 minute 100 year Winter I+45%	24.538	24.469	-0.069	0.000	0.38	0.600	0.7	181.0	FLOOD RISK
ML2-13.000	ML2-51	15 minute 100 year Winter I+45%	33.343	32.045	-0.098	0.000	0.55	0.106	1.0	21.6	OK
ML2-13.001	ML2-52	15 minute 100 year Winter I+45%	32.998	31.881	0.503	0.000	0.86	3.942	1.1	33.4	SURCHARGED
ML2-13.002	ML2-53	15 minute 100 year Winter I+45%	32.251	31.505	0.826	0.000	1.12	4.830	1.3	50.2	SURCHARGED
ML2-13.003	ML2-54	15 minute 100 year Winter I+45%	30.883	30.134	0.451	0.000	1.08	2.975	1.7	65.8	SURCHARGED
ML2-13.004	ML2-55	15 minute 100 year Winter I+45%	29.038	28.047	0.209	0.000	1.04	1.159	2.1	77.4	SURCHARGED
ML2-13.005	ML2-56	15 minute 100 year Winter I+45%	26.339	25.038	-0.101	0.000	0.74	0.260	2.9	137.7	OK
ML2-13.006	ML2-57	30 minute 100 year Winter I+45%	22.877	22.397	0.720	0.000	1.06	2.566	1.1	118.8	SURCHARGED
ML2-14.000	ML2-58	15 minute 100 year Winter I+45%	32.488	31.175	-0.113	0.000	0.47	0.189	1.0	19.3	OK
ML2-14.001	ML2-59	15 minute 100 year Winter I+45%	31.813	30.389	-0.126	0.000	0.63	0.398	1.5	63.6	OK
ML2-15.000	ML2-60	15 minute 100 year Winter I+45%	33.070	31.700	-0.170	0.000	0.12	0.043	0.7	5.1	OK
ML2-15.001	ML2-61	15 minute 100 year Winter I+45%	32.797	30.916	-0.135	0.000	0.30	0.169	0.9	12.0	OK
ML2-15.002	ML2-62	15 minute 100 year Winter I+45%	32.016	30.153	-0.116	0.000	0.45	0.219	1.0	17.7	OK
ML2-15.003	ML2-63	15 minute 100 year Winter I+45%	31.129	29.600	-0.119	0.000	0.44	0.182	1.0	17.5	OK
ML2-14.002	ML2-64	15 minute 100 year Winter I+45%	30.823	29.524	-0.100	0.000	0.78	0.841	1.9	96.6	OK
ML2-14.003	ML2-65	15 minute 100 year Winter I+45%	29.153	27.857	-0.097	0.000	0.79	0.603	2.2	112.0	OK
ML2-14.004	ML2-66	15 minute 100 year Winter I+45%	27.003	25.709	-0.094	0.000	0.81	0.558	2.5	127.7	OK
ML2-14.005	ML2-67	15 minute 100 year Winter I+45%	24.331	22.913	-0.218	0.000	0.36	0.296	3.3	141.9	OK
ML2-12.007	ML2-68	30 minute 100 year Winter I+45%	23.554	22.307	0.714	0.000	1.29	5.468	2.6	407.9	SURCHARGED
ML2-12.008	ML2-69	30 minute 100 year Winter I+45%	22.270	21.536	0.466	0.000	0.82	8.092	3.3	390.3	SURCHARGED
ML2-12.009	ML2-70	30 minute 100 year Winter I+45%	20.109	20.094	1.185	0.000	1.04	9.484	2.6	394.1	FLOOD RISK
ML2-12.010	ML2-71	15 minute 100 year Winter I+45%	19.243	19.171	1.128	0.000	1.58	8.672	2.5	396.1	FLOOD RISK
ML2-12.011	ML2-72	15 minute 100 year Winter I+45%	18.761	18.132	0.571	0.000	0.80	10.329	3.0	415.2	SURCHARGED
ML2-4.004	ML2-73	15 minute 100 year Winter I+45%	18.669	17.723	0.639	0.000	2.09	19.046	1.9	1018.3	SURCHARGED
ML2-16.000	ML2-74	15 minute 100 year Winter I+45%	32.290	32.270	-0.020	0.000	0.67	0.000	0.2	86.9	FLOOD RISK
ML2-16.001	ML2-75	15 minute 100 year Winter I+45%	32.023	31.998	-0.025	0.000	0.62	10.321	0.4	134.9	FLOOD RISK
ML2-16.002	ML2-76	15 minute 100 year Winter I+45%	31.273	31.253	-0.020	0.000	0.67	3.869	0.5	172.8	FLOOD RISK
ML2-16.003	ML2-77	15 minute 100 year Winter I+45%	30.129	30.088	-0.041	0.000	0.56	2.134	0.6	184.7	FLOOD RISK
ML2-16.004	ML2-78	15 minute 100 year Winter I+45%	29.097	29.055	-0.042	0.000	0.54	1.299	0.6	197.6	FLOOD RISK
ML2-16.005	ML2-79	15 minute 100 year Winter I+45%	27.557	27.533	-0.024	0.000	0.69	1.311	0.5	207.5	FLOOD RISK
ML2-16.006	ML2-80	15 minute 100 year Winter I+45%	26.520	26.476	-0.044	0.000	0.55	1.659	0.6	203.6	FLOOD RISK*

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML02

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-17.000	ML2-RE	15 minute 100 year Summer I+45%	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	15 minute 100 year Summer I+45%	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	15 minute 100 year Summer I+45%	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	15 minute 100 year Summer I+45%	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	15 minute 100 year Summer I+45%	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	15 minute 100 year Summer I+45%	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	15 minute 100 year Winter I+45%	32.018	30.536	-0.282	0.000	0.14	0.155	1.0	20.9	OK
ML2-19.001	ML2-86	15 minute 100 year Winter I+45%	31.277	29.820	-0.257	0.000	0.21	0.385	1.4	42.0	OK
ML2-19.002	ML2-87	15 minute 100 year Winter I+45%	29.959	28.516	-0.242	0.000	0.27	0.384	1.7	60.5	OK
ML2-18.002	ML2-88	15 minute 100 year Winter I+45%	28.947	27.519	-0.228	0.000	0.32	0.409	2.0	78.5	OK
ML2-18.003	ML2-89	15 minute 100 year Winter I+45%	27.560	26.141	-0.219	0.000	0.36	0.413	1.8	78.2	OK
ML2-17.004	ML2-82	15 minute 100 year Winter I+45%	27.017	25.564	-0.196	0.000	0.46	0.525	1.9	98.6	OK
ML2-17.005	ML2-90	15 minute 100 year Winter I+45%	26.359	24.966	-0.193	0.000	0.47	0.540	2.2	116.6	OK
ML2-16.007	ML2-91	15 minute 100 year Winter I+45%	24.761	23.893	0.457	0.000	1.01	4.780	3.0	300.0	SURCHARGED
ML2-16.008	ML2-92	15 minute 100 year Winter I+45%	23.496	22.693	0.468	0.000	0.94	3.906	3.1	294.8	SURCHARGED
ML2-16.009	ML2-93	30 minute 100 year Winter I+45%	20.639	20.211	0.772	0.000	1.13	4.748	2.7	298.0	SURCHARGED
ML2-20.000	ML2-94A	15 minute 100 year Winter I+45%	19.700	18.350	-0.150	0.000	0.24	0.079	1.1	12.9	OK
ML2-4.005	ML2-94	15 minute 100 year Winter I+45%	19.418	17.440	0.397	0.000	2.15	14.258	2.4	1298.8	SURCHARGED
ML2-21.000	ML2-01A	15 minute 100 year Winter I+45%	22.195	21.842	2.147	0.000	0.45	0.322	0.8	19.6	SURCHARGED
ML2-21.001	ML2-01	15 minute 100 year Winter I+45%	22.094	21.825	2.231	0.000	0.83	1.297	0.9	36.1	FLOOD RISK
ML2-21.002	ML2-01B	15 minute 100 year Winter I+45%	21.986	21.769	2.283	0.000	1.31	1.386	1.2	56.8	FLOOD RISK
ML2-21.003	ML2-02	15 minute 100 year Winter I+45%	21.881	21.678	2.297	0.000	0.69	1.367	1.1	73.3	FLOOD RISK
ML2-21.004	ML2-02A	15 minute 100 year Winter I+45%	21.720	21.642	2.422	0.000	0.97	3.414	1.2	101.3	FLOOD RISK
ML2-21.005	ML2-03	15 minute 100 year Winter I+45%	21.583	21.579	2.496	0.000	1.16	2.970	1.3	121.0	FLOOD RISK
ML2-21.006	ML2-03A	15 minute 100 year Winter I+45%	21.442	21.442	2.500	0.087	1.40	3.127	1.5	144.4	FLOOD
ML2-21.007	ML2-04	15 minute 100 year Winter I+45%	21.312	21.301	2.489	0.000	1.54	2.845	1.7	160.2	FLOOD RISK
ML2-21.008	ML2-04A	30 minute 100 year Winter I+45%	21.173	21.060	2.387	0.000	1.44	3.016	1.6	149.6	FLOOD RISK
ML2-21.009	ML2-05	30 minute 100 year Winter I+45%	21.045	20.851	2.306	0.000	0.84	2.763	1.3	163.8	FLOOD RISK
ML2-21.010	ML2-05A	30 minute 100 year Winter I+45%	20.904	20.808	2.404	0.000	0.91	4.765	1.3	176.8	FLOOD RISK
ML2-21.011	ML2-06	30 minute 100 year Winter I+45%	20.773	20.700	2.427	0.000	1.00	4.383	1.3	195.0	FLOOD RISK
ML2-21.012	ML2-06A	30 minute 100 year Winter I+45%	20.632	20.631	2.499	0.012	1.09	4.806	1.4	209.9	FLOOD
ML2-21.013	ML2-07	30 minute 100 year Winter I+45%	20.504	20.505	2.501	0.837	1.14	5.036	1.4	221.3	FLOOD
ML2-21.014	ML2-07A	30 minute 100 year Winter I+45%	20.363	20.365	2.502	1.744	1.23	6.508	1.5	236.6	FLOOD
ML2-21.015	ML2-08	30 minute 100 year Winter I+45%	20.235	20.235	2.500	0.521	1.27	4.874	1.6	246.8	FLOOD
ML2-21.016	ML2-08A	30 minute 100 year Winter I+45%	20.094	20.095	2.501	1.035	1.34	5.609	1.6	257.7	FLOOD
ML2-21.017	ML2-09	30 minute 100 year Winter I+45%	19.966	19.966	2.500	0.609	1.42	4.888	1.7	270.4	FLOOD
ML2-21.018	ML2-09A	30 minute 100 year Winter I+45%	19.846	19.787	2.441	0.000	1.65	4.046	1.8	278.9	FLOOD RISK
ML2-21.019	ML2-10	30 minute 100 year Winter I+45%	19.762	19.605	2.343	0.000	2.55	11.169	1.6	259.6	FLOOD RISK
ML2-22.000	ML2-11D	30 minute 100 year Summer I+45%	22.500	21.579	1.579	0.000	0.35	0.210	0.8	14.9	SURCHARGED
ML2-22.001	ML2-11C	30 minute 100 year Summer I+45%	22.403	21.339	1.436	0.000	0.56	1.153	0.9	24.3	SURCHARGED
ML2-22.002	ML2-11B	30 minute 100 year Summer I+45%	22.293	21.133	1.340	0.000	0.84	1.234	1.0	36.2	SURCHARGED
ML2-22.003	ML2-11	30 minute 100 year Winter I+45%	22.189	21.090	1.401	0.000	0.97	1.206	1.1	44.0	SURCHARGED
ML2-22.004	ML2-11A	30 minute 100 year Summer I+45%	22.028	21.039	1.511	0.000	0.64	1.762	1.1	67.0	SURCHARGED
ML2-22.005	ML2-12	30 minute 100 year Winter I+45%	21.888	20.917	1.529	0.000	0.69	2.845	1.2	72.0	SURCHARGED
ML2-22.006	ML2-12A	30 minute 100 year Winter I+45%	21.746	20.833	1.587	0.000	0.82	2.883	1.2	82.9	SURCHARGED
ML2-22.007	ML2-13	30 minute 100 year Winter I+45%	21.621	20.803	1.682	0.000	0.84	2.679	1.2	87.9	SURCHARGED
ML2-22.008	ML2-13A	30 minute 100 year Winter I+45%	21.479	20.703	1.724	0.000	0.89	2.894	1.2	91.7	SURCHARGED
ML2-22.009	ML2-14	30 minute 100 year Winter I+45%	21.350	20.664	1.814	0.000	0.97	2.713	1.2	99.3	SURCHARGED
ML2-22.010	ML2-14A	30 minute 100 year Winter I+45%	21.214	20.573	1.859	0.000	1.10	2.906	1.2	115.1	SURCHARGED
ML2-22.011	ML2-15	30 minute 100 year Winter I+45%	21.075	20.489	1.914	0.000	1.22	2.853	1.3	128.1	SURCHARGED
ML2-22.012	ML2-15A	30 minute 100 year Winter I+45%	20.932	20.364	1.932	0.000	1.38	2.921	1.5	140.2	SURCHARGED
ML2-22.013	ML2-16	30 minute 100 year Winter I+45%	20.814	20.213	1.899	0.000	0.77	2.551	1.3	153.0	SURCHARGED
ML2-22.014	ML2-16A	30 minute 100 year Winter I+45%	20.669	20.102	1.933	0.000	0.86	4.669	1.3	164.0	SURCHARGED
ML2-22.015	ML2-17	30 minute 100 year Winter I+45%	20.542	20.002	1.960	0.000	0.90	4.292	1.3	172.5	SURCHARGED
ML2-22.016	ML2-17A	30 minute 100 year Winter I+45%	20.405	19.889	1.984	0.000	0.96	4.675	1.3	183.8	SURCHARGED
ML2-22.017	ML2-18	30 minute 100 year Winter I+45%	20.277	19.780	2.003	0.000	1.03	4.341	1.3	194.4	SURCHARGED
ML2-22.018	ML2-18A	30 minute 100 year Winter I+45%	20.158	19.668	2.010	0.000	0.56	4.037	2.1	204.3	SURCHARGED
ML2-21.020	ML2-19	30 minute 100 year Winter I+45%	20.089	19.451	2.144	0.000	2.16	12.429	2.0	433.3	SURCHARGED
ML2-21.021	ML2-20	30 minute 100 year Winter I+45%	20.216	19.206	1.945	0.000	2.10	11.065	2.0	422.0	SURCHARGED
ML2-23.000	ML2-21	15 minute 100 year Winter I+45%	20.002	19.971	-0.031	0.000	0.54	0.000	0.7	49.5	FLOOD RISK
ML2-23.001	ML2-22	30 minute 100 year Winter I+45%	19.729	18.665	0.136	0.000	0.23	1.173	0.9	38.2	SURCHARGED
ML2-21.022	ML2-23	30 minute 100 year Winter I+45%	20.103	18.650	1.533	0.000	2.03	19.137	2.0	419.6	SURCHARGED
ML2-21.023	ML2-24	30 minute 100 year Winter I+45%	19.682	17.731	0.842	0.000	1.83	22.413	1.9	408.6	SURCHARGED
ML2-4.006	ML2-FB	30 minute 100 year Winter I+45%	17.600	16.832	-0.168	0.000	1.00	423.203	2.6	1425.9	OK
ML2-4.007	ML2-IB	2160 minute 100 year Winter I+45%	17.600	16.626	-0.374	0.000	0.00	5860.061	0.0	0.0	OK
ML2-24.000	ML2-95A	15 minute 100 year Summer I+45%	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	15 minute 100 year Summer I+45%	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	15 minute 100 year Summer I+45%	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

Summary of Results for 15 minute 100 year Winter (SWS-ML02)

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	23.257	23.085	-0.173	0.000	0.03	0.000	1.1	35.7	FLOOD RISK
ML2-4.001	ML2-26	21.395	20.099	-0.096	0.000	0.60	0.107	2.0	45.0	OK
ML2-4.002	ML2-27	18.587	18.596	1.209	0.254	0.93	4.365	1.3	46.0	FLOOD
ML2-5.000	ML2-28	18.393	18.100	0.907	0.000	0.57	1.992	1.0	22.5	FLOOD RISK
ML2-6.000	ML2-29	19.338	19.249	-0.089	0.000	0.27	0.000	0.4	64.8	FLOOD RISK
ML2-6.001	ML2-30	18.800	18.790	-0.010	0.000	0.75	3.398	0.3	128.6	FLOOD RISK
ML2-6.002	ML2-31	18.395	18.420	0.025	0.015	1.00	7.651	0.3	164.0	FLOOD
ML2-7.000	ML2-32	21.495	21.406	-0.089	0.000	0.25	0.000	0.6	96.9	FLOOD RISK
ML2-7.001	ML2-33	18.828	18.783	-0.045	0.000	0.54	0.862	0.4	141.8	FLOOD RISK
ML2-4.003	ML2-34	18.009	17.897	1.053	0.000	1.69	11.070	1.6	342.1	FLOOD RISK
ML2-8.000	ML2-35	19.482	19.426	-0.056	0.000	0.40	0.000	0.3	69.5	FLOOD RISK
ML2-8.001	ML2-36	19.069	19.052	-0.017	0.000	0.79	6.288	0.3	124.8	FLOOD RISK
ML2-9.000	ML2-37	19.069	17.846	-0.023	0.000	0.43	0.348	1.2	21.3	OK
ML2-10.000	ML2-38	25.790	25.673	-0.117	0.000	0.16	0.000	0.6	68.5	FLOOD RISK
ML2-10.001	ML2-39	23.882	23.859	-0.137	0.000	0.11	0.135	1.6	127.7	FLOOD RISK
ML2-10.002	ML2-40	22.755	22.701	-0.054	0.000	0.42	0.552	0.7	189.2	FLOOD RISK
ML2-10.003	ML2-41	20.026	19.994	-0.032	0.000	0.66	0.794	0.6	226.2	FLOOD RISK
ML2-10.004	ML2-42	19.140	18.619	0.604	0.000	0.91	1.722	2.3	217.5	SURCHARGED
ML2-11.000	ML2-43	19.161	19.065	-0.096	0.000	0.25	0.000	0.3	55.3	FLOOD RISK
ML2-12.000	ML2-44	32.734	32.714	-0.020	0.000	0.64	0.000	0.2	78.6	FLOOD RISK
ML2-12.001	ML2-45	32.491	32.460	-0.031	0.000	0.57	10.743	0.4	112.7	FLOOD RISK
ML2-12.002	ML2-46	31.855	31.791	-0.064	0.000	0.37	2.550	0.4	102.8	FLOOD RISK
ML2-12.003	ML2-47	30.867	30.824	-0.043	0.000	0.48	1.829	0.5	143.7	FLOOD RISK
ML2-12.004	ML2-48	29.345	29.302	-0.043	0.000	0.49	1.558	0.6	180.6	FLOOD RISK
ML2-12.005	ML2-49	27.038	26.992	-0.046	0.000	0.48	0.962	0.7	184.2	FLOOD RISK
ML2-12.006	ML2-50	24.538	24.466	-0.072	0.000	0.37	0.570	0.7	174.8	FLOOD RISK
ML2-13.000	ML2-51	33.343	32.045	-0.098	0.000	0.54	0.105	1.0	21.1	OK
ML2-13.001	ML2-52	32.998	31.828	0.450	0.000	0.84	3.613	1.1	32.8	SURCHARGED
ML2-13.002	ML2-53	32.251	31.427	0.749	0.000	1.11	4.740	1.3	49.7	SURCHARGED
ML2-13.003	ML2-54	30.883	30.097	0.415	0.000	1.07	2.785	1.8	65.4	SURCHARGED
ML2-13.004	ML2-55	29.038	28.006	0.167	0.000	1.03	1.024	2.1	76.7	SURCHARGED
ML2-13.005	ML2-56	26.339	25.037	-0.102	0.000	0.73	0.259	2.9	135.8	OK
ML2-13.006	ML2-57	22.877	22.191	0.514	0.000	1.16	2.000	1.2	129.6	SURCHARGED
ML2-14.000	ML2-58	32.488	31.175	-0.113	0.000	0.47	0.189	1.0	19.1	OK
ML2-14.001	ML2-59	31.813	30.388	-0.127	0.000	0.61	0.394	1.5	62.1	OK
ML2-15.000	ML2-60	33.070	31.700	-0.170	0.000	0.12	0.043	0.7	4.9	OK
ML2-15.001	ML2-61	32.797	30.916	-0.135	0.000	0.29	0.168	0.9	11.6	OK
ML2-15.002	ML2-62	32.016	30.153	-0.116	0.000	0.44	0.219	1.0	17.1	OK
ML2-15.003	ML2-63	31.129	29.598	-0.121	0.000	0.44	0.176	1.0	17.1	OK
ML2-14.002	ML2-64	30.823	29.521	-0.102	0.000	0.75	0.825	1.9	93.3	OK
ML2-14.003	ML2-65	29.153	27.853	-0.100	0.000	0.77	0.589	2.2	108.2	OK
ML2-14.004	ML2-66	27.003	25.705	-0.098	0.000	0.78	0.541	2.5	123.6	OK
ML2-14.005	ML2-67	24.331	22.909	-0.222	0.000	0.35	0.288	3.2	137.0	OK
ML2-12.007	ML2-68	23.554	22.143	0.550	0.000	1.30	4.895	2.6	410.8	SURCHARGED
ML2-12.008	ML2-69	22.270	21.386	0.316	0.000	0.83	7.334	3.3	394.3	SURCHARGED
ML2-12.009	ML2-70	20.109	19.996	1.087	0.000	1.02	8.855	2.6	387.2	FLOOD RISK
ML2-12.010	ML2-71	19.243	19.123	1.080	0.000	1.55	8.602	2.5	388.7	FLOOD RISK
ML2-12.011	ML2-72	18.761	18.095	0.534	0.000	0.78	10.261	3.2	406.5	SURCHARGED
ML2-4.004	ML2-73	18.669	17.716	0.632	0.000	2.10	18.984	1.9	1025.2	SURCHARGED
ML2-16.000	ML2-74	32.290	32.270	-0.020	0.000	0.65	0.000	0.2	83.2	FLOOD RISK
ML2-16.001	ML2-75	32.023	31.996	-0.027	0.000	0.60	10.170	0.4	130.4	FLOOD RISK
ML2-16.002	ML2-76	31.273	31.254	-0.019	0.000	0.66	3.920	0.5	169.0	FLOOD RISK
ML2-16.003	ML2-77	30.129	30.088	-0.041	0.000	0.55	2.156	0.6	180.8	FLOOD RISK
ML2-16.004	ML2-78	29.097	29.055	-0.042	0.000	0.53	1.303	0.6	192.9	FLOOD RISK
ML2-16.005	ML2-79	27.557	27.533	-0.024	0.000	0.67	1.316	0.5	201.5	FLOOD RISK
ML2-16.006	ML2-80	26.520	26.475	-0.045	0.000	0.54	1.640	0.6	198.8	FLOOD RISK*
ML2-17.000	ML2-RE	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	32.018	30.535	-0.283	0.000	0.13	0.154	1.0	20.2	OK
ML2-19.001	ML2-86	31.277	29.818	-0.259	0.000	0.21	0.376	1.4	41.0	OK
ML2-19.002	ML2-87	29.959	28.514	-0.244	0.000	0.27	0.377	1.7	59.0	OK
ML2-18.002	ML2-88	28.947	27.517	-0.230	0.000	0.32	0.399	2.0	76.4	OK
ML2-18.003	ML2-89	27.560	26.138	-0.222	0.000	0.35	0.405	1.8	76.5	OK
ML2-17.004	ML2-82	27.017	25.561	-0.199	0.000	0.45	0.514	1.9	96.7	OK
ML2-17.005	ML2-90	26.359	24.963	-0.196	0.000	0.46	0.528	2.2	113.8	OK
ML2-16.007	ML2-91	24.761	23.740	0.304	0.000	1.00	3.718	3.1	296.6	SURCHARGED
ML2-16.008	ML2-92	23.496	22.581	0.356	0.000	0.93	3.280	3.2	291.1	SURCHARGED
ML2-16.009	ML2-93	20.639	20.153	0.714	0.000	1.12	4.472	2.7	294.1	SURCHARGED
ML2-20.000	ML2-94A	19.700	18.350	-0.150	0.000	0.24	0.079	1.1	12.8	OK
ML2-4.005	ML2-94	19.418	17.427	0.384	0.000	2.11	14.114	2.4	1273.9	SURCHARGED
ML2-21.000	ML2-01A	22.195	21.893	2.198	0.000	0.46	0.329	0.8	20.0	SURCHARGED
ML2-21.001	ML2-01	22.094	21.867	2.273	0.000	0.86	1.303	0.9	37.3	FLOOD RISK
ML2-21.002	ML2-01B	21.986	21.819	2.333	0.000	1.31	1.393	1.2	57.1	FLOOD RISK

Summary of Results for 15 minute 100 year Winter (SWS-ML02)

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-21.003	ML2-02	21.881	21.716	2.335	0.000	0.68	1.373	1.1	71.9	FLOOD RISK
ML2-21.004	ML2-02A	21.720	21.667	2.447	0.000	0.93	3.417	1.2	96.7	FLOOD RISK
ML2-21.005	ML2-03	21.583	21.583	2.500	0.000	1.10	2.971	1.2	114.9	FLOOD
ML2-21.006	ML2-03A	21.442	21.449	2.507	0.000	1.30	3.053	1.4	133.9	FLOOD
ML2-21.007	ML2-04	21.312	21.316	2.504	0.000	1.46	2.855	1.6	151.8	FLOOD
ML2-21.008	ML2-04A	21.173	21.143	2.470	0.000	1.64	3.027	1.8	170.0	FLOOD RISK
ML2-21.009	ML2-05	21.045	20.914	2.369	0.000	0.95	2.772	1.3	185.6	FLOOD RISK
ML2-21.010	ML2-05A	20.904	20.821	2.417	0.000	1.04	4.767	1.3	202.2	FLOOD RISK
ML2-21.011	ML2-06	20.773	20.723	2.450	0.000	1.10	4.386	1.4	213.6	FLOOD RISK
ML2-21.012	ML2-06A	20.632	20.623	2.491	0.000	1.18	4.804	1.5	226.7	FLOOD RISK
ML2-21.013	ML2-07	20.504	20.507	2.503	0.110	1.23	4.400	1.5	240.6	FLOOD
ML2-21.014	ML2-07A	20.363	20.368	2.505	0.000	1.31	4.809	1.6	251.6	FLOOD
ML2-21.015	ML2-08	20.235	20.209	2.474	0.000	1.33	4.401	1.6	259.1	FLOOD RISK
ML2-21.016	ML2-08A	20.094	20.034	2.440	0.000	1.39	4.780	1.7	266.3	FLOOD RISK
ML2-21.017	ML2-09	19.966	19.870	2.404	0.000	1.45	4.375	1.7	276.3	FLOOD RISK
ML2-21.018	ML2-09A	19.846	19.687	2.341	0.000	1.68	4.036	1.8	284.1	FLOOD RISK
ML2-21.019	ML2-10	19.762	19.496	2.234	0.000	2.63	10.790	1.7	267.7	FLOOD RISK
ML2-22.000	ML2-11D	22.500	20.733	0.733	0.000	0.36	0.113	0.8	15.5	SURCHARGED
ML2-22.001	ML2-11C	22.403	20.719	0.816	0.000	0.59	1.083	0.9	25.9	SURCHARGED
ML2-22.002	ML2-11B	22.293	20.694	0.901	0.000	0.89	1.184	1.0	38.5	SURCHARGED
ML2-22.003	ML2-11	22.189	20.655	0.966	0.000	1.15	1.157	1.1	51.9	SURCHARGED
ML2-22.004	ML2-11A	22.028	20.579	1.051	0.000	0.66	1.710	1.2	68.7	SURCHARGED
ML2-22.005	ML2-12	21.888	20.543	1.155	0.000	0.74	2.803	1.2	77.5	SURCHARGED
ML2-22.006	ML2-12A	21.746	20.496	1.250	0.000	0.87	2.844	1.2	87.9	SURCHARGED
ML2-22.007	ML2-13	21.621	20.435	1.314	0.000	0.92	2.638	1.2	96.9	SURCHARGED
ML2-22.008	ML2-13A	21.479	20.348	1.369	0.000	1.05	2.854	1.2	108.5	SURCHARGED
ML2-22.009	ML2-14	21.350	20.273	1.423	0.000	1.18	2.667	1.3	120.8	SURCHARGED
ML2-22.010	ML2-14A	21.214	20.165	1.451	0.000	1.29	2.860	1.4	135.0	SURCHARGED
ML2-22.011	ML2-15	21.075	20.028	1.453	0.000	1.40	2.801	1.5	147.7	SURCHARGED
ML2-22.012	ML2-15A	20.932	19.877	1.445	0.000	1.57	2.864	1.7	158.6	SURCHARGED
ML2-22.013	ML2-16	20.814	19.740	1.426	0.000	0.83	2.498	1.3	163.8	SURCHARGED
ML2-22.014	ML2-16A	20.669	19.687	1.518	0.000	0.90	4.621	1.3	172.5	SURCHARGED
ML2-22.015	ML2-17	20.542	19.627	1.585	0.000	0.90	4.248	1.3	173.8	SURCHARGED
ML2-22.016	ML2-17A	20.405	19.554	1.649	0.000	0.95	4.636	1.3	181.1	SURCHARGED
ML2-22.017	ML2-18	20.277	19.473	1.696	0.000	0.99	4.306	1.3	187.1	SURCHARGED
ML2-22.018	ML2-18A	20.158	19.386	1.728	0.000	0.52	4.004	2.0	191.6	SURCHARGED
ML2-21.020	ML2-19	20.089	19.296	1.989	0.000	2.19	11.895	2.0	440.2	SURCHARGED
ML2-21.021	ML2-20	20.216	19.046	1.785	0.000	2.08	10.510	2.0	417.1	SURCHARGED
ML2-23.000	ML2-21	20.002	19.971	-0.031	0.000	0.54	0.000	0.7	49.1	FLOOD RISK
ML2-23.001	ML2-22	19.729	18.495	-0.034	0.000	0.29	0.829	0.9	48.5	OK
ML2-21.022	ML2-23	20.103	18.491	1.374	0.000	1.96	18.531	1.9	405.1	SURCHARGED
ML2-21.023	ML2-24	19.682	17.621	0.732	0.000	1.73	22.133	1.9	386.3	SURCHARGED
ML2-4.006	ML2-FB	17.600	16.791	-0.209	0.000	0.94	396.853	2.6	1347.3	OK
ML2-4.007	ML2-IB	17.600	15.936	-1.064	0.000	0.00	1812.904	0.0	0.0	OK
ML2-24.000	ML2-95A	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

Summary of Results for 30 minute 100 year Winter (SWS-ML02)

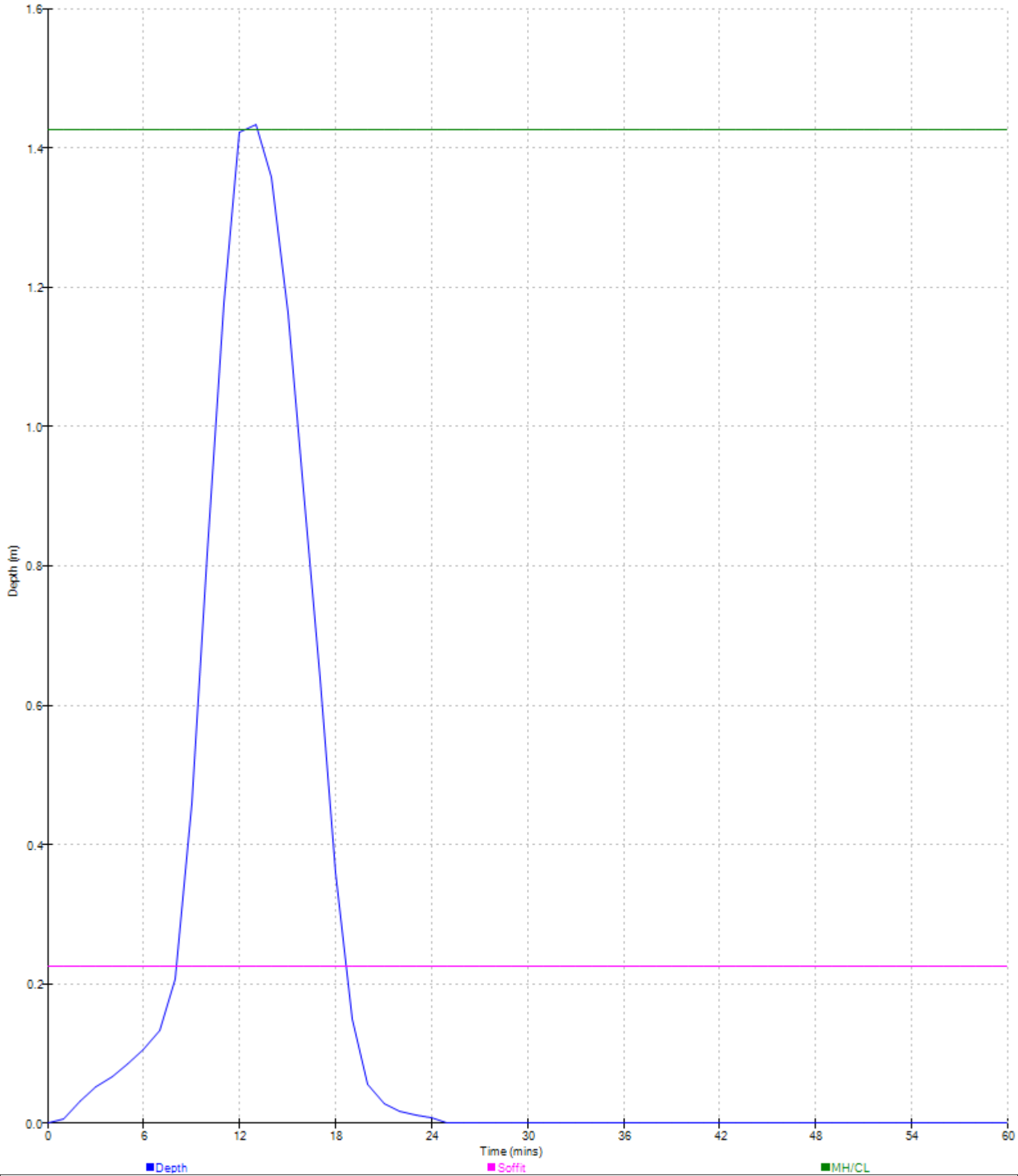
Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-4.000	ML2-25	23.257	23.081	-0.177	0.000	0.02	0.000	1.0	27.8	FLOOD RISK
ML2-4.001	ML2-26	21.395	20.080	-0.115	0.000	0.47	0.091	1.9	35.7	OK
ML2-4.002	ML2-27	18.587	18.407	1.020	0.000	0.86	3.772	1.3	42.7	FLOOD RISK
ML2-5.000	ML2-28	18.393	17.990	0.797	0.000	0.54	1.798	0.9	21.1	SURCHARGED
ML2-6.000	ML2-29	19.338	19.235	-0.103	0.000	0.22	0.000	0.3	52.2	FLOOD RISK
ML2-6.001	ML2-30	18.800	18.770	-0.030	0.000	0.63	2.778	0.3	107.9	FLOOD RISK
ML2-6.002	ML2-31	18.395	18.387	-0.008	0.000	0.90	6.917	0.3	146.4	FLOOD RISK
ML2-7.000	ML2-32	21.495	21.392	-0.103	0.000	0.21	0.000	0.6	81.2	FLOOD RISK
ML2-7.001	ML2-33	18.828	18.770	-0.058	0.000	0.44	0.707	0.4	115.9	FLOOD RISK
ML2-4.003	ML2-34	18.009	17.799	0.955	0.000	1.53	9.564	1.4	309.6	FLOOD RISK
ML2-8.000	ML2-35	19.482	19.408	-0.074	0.000	0.34	0.000	0.3	58.2	FLOOD RISK
ML2-8.001	ML2-36	19.069	19.034	-0.035	0.000	0.63	5.183	0.3	99.9	FLOOD RISK
ML2-9.000	ML2-37	19.069	17.766	-0.103	0.000	0.39	0.207	1.2	19.3	OK
ML2-10.000	ML2-38	25.790	25.663	-0.127	0.000	0.13	0.000	0.5	54.7	FLOOD RISK
ML2-10.001	ML2-39	23.882	23.850	-0.146	0.000	0.09	0.114	1.5	101.5	FLOOD RISK
ML2-10.002	ML2-40	22.755	22.682	-0.073	0.000	0.35	0.394	0.7	154.9	FLOOD RISK
ML2-10.003	ML2-41	20.026	19.980	-0.046	0.000	0.54	0.660	0.6	183.8	FLOOD RISK
ML2-10.004	ML2-42	19.140	18.243	0.228	0.000	0.76	1.057	2.3	180.4	SURCHARGED
ML2-11.000	ML2-43	19.161	19.051	-0.110	0.000	0.19	0.000	0.3	43.5	FLOOD RISK
ML2-12.000	ML2-44	32.734	32.693	-0.041	0.000	0.54	0.000	0.2	66.0	FLOOD RISK
ML2-12.001	ML2-45	32.491	32.446	-0.045	0.000	0.51	9.027	0.3	100.0	FLOOD RISK
ML2-12.002	ML2-46	31.855	31.782	-0.073	0.000	0.35	2.110	0.4	95.4	FLOOD RISK
ML2-12.003	ML2-47	30.867	30.814	-0.053	0.000	0.45	1.586	0.5	135.4	FLOOD RISK
ML2-12.004	ML2-48	29.345	29.294	-0.051	0.000	0.46	1.383	0.6	172.0	FLOOD RISK
ML2-12.005	ML2-49	27.038	26.987	-0.051	0.000	0.47	0.889	0.6	181.6	FLOOD RISK
ML2-12.006	ML2-50	24.538	24.465	-0.073	0.000	0.37	0.558	0.7	172.8	FLOOD RISK
ML2-13.000	ML2-51	33.343	32.026	-0.117	0.000	0.44	0.089	1.0	17.5	OK
ML2-13.001	ML2-52	32.998	31.567	0.188	0.000	0.82	1.975	1.1	31.9	SURCHARGED
ML2-13.002	ML2-53	32.251	31.138	0.460	0.000	1.09	3.732	1.3	48.8	SURCHARGED
ML2-13.003	ML2-54	30.883	29.951	0.269	0.000	1.06	2.041	1.8	64.4	SURCHARGED
ML2-13.004	ML2-55	29.038	27.906	0.068	0.000	1.01	0.700	2.2	75.6	SURCHARGED
ML2-13.005	ML2-56	26.339	25.020	-0.119	0.000	0.66	0.232	2.8	122.6	OK
ML2-13.006	ML2-57	22.877	22.239	0.562	0.000	1.05	2.132	1.2	117.2	SURCHARGED
ML2-14.000	ML2-58	32.488	31.167	-0.121	0.000	0.43	0.176	1.0	17.5	OK
ML2-14.001	ML2-59	31.813	30.380	-0.135	0.000	0.58	0.369	1.5	58.1	OK
ML2-15.000	ML2-60	33.070	31.693	-0.177	0.000	0.10	0.037	0.7	4.0	OK
ML2-15.001	ML2-61	32.797	30.904	-0.147	0.000	0.24	0.144	0.9	9.8	OK
ML2-15.002	ML2-62	32.016	30.141	-0.128	0.000	0.37	0.187	0.9	14.5	OK
ML2-15.003	ML2-63	31.129	29.589	-0.130	0.000	0.37	0.160	0.9	14.6	OK
ML2-14.002	ML2-64	30.823	29.511	-0.113	0.000	0.70	0.762	1.9	87.6	OK
ML2-14.003	ML2-65	29.153	27.845	-0.108	0.000	0.73	0.559	2.2	103.0	OK
ML2-14.004	ML2-66	27.003	25.699	-0.104	0.000	0.75	0.521	2.4	118.9	OK
ML2-14.005	ML2-67	24.331	22.907	-0.224	0.000	0.34	0.282	3.2	132.4	OK
ML2-12.007	ML2-68	23.554	22.185	0.592	0.000	1.28	5.043	2.6	404.1	SURCHARGED
ML2-12.008	ML2-69	22.270	21.416	0.346	0.000	0.81	7.565	3.3	386.6	SURCHARGED
ML2-12.009	ML2-70	20.109	20.012	1.103	0.000	1.03	8.957	2.6	387.5	FLOOD RISK
ML2-12.010	ML2-71	19.243	19.123	1.080	0.000	1.56	8.602	2.5	390.1	FLOOD RISK
ML2-12.011	ML2-72	18.761	18.046	0.485	0.000	0.77	10.172	3.1	402.4	SURCHARGED
ML2-4.004	ML2-73	18.669	17.644	0.560	0.000	1.97	18.283	1.8	961.8	SURCHARGED
ML2-16.000	ML2-74	32.290	32.249	-0.041	0.000	0.54	0.000	0.2	69.8	FLOOD RISK
ML2-16.001	ML2-75	32.023	31.981	-0.042	0.000	0.53	8.468	0.4	114.6	FLOOD RISK
ML2-16.002	ML2-76	31.273	31.241	-0.032	0.000	0.61	3.418	0.5	156.7	FLOOD RISK
ML2-16.003	ML2-77	30.129	30.082	-0.047	0.000	0.52	1.985	0.6	171.0	FLOOD RISK
ML2-16.004	ML2-78	29.097	29.050	-0.047	0.000	0.51	1.209	0.6	186.5	FLOOD RISK
ML2-16.005	ML2-79	27.557	27.528	-0.029	0.000	0.66	1.246	0.5	198.9	FLOOD RISK
ML2-16.006	ML2-80	26.520	26.474	-0.046	0.000	0.54	1.612	0.6	197.2	FLOOD RISK*
ML2-17.000	ML2-RE	36.277	35.077	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.001	ML2-83	35.830	34.630	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.002	ML2-81	34.440	33.240	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-17.003	ML2-84	34.000	32.800	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.000	ML2-dummy	34.728	34.330	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-18.001	ML2-dummy	29.200	27.744	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-19.000	ML2-85	32.018	30.530	-0.288	0.000	0.12	0.144	1.0	18.3	OK
ML2-19.001	ML2-86	31.277	29.814	-0.263	0.000	0.19	0.342	1.4	38.0	OK
ML2-19.002	ML2-87	29.959	28.510	-0.248	0.000	0.25	0.356	1.7	55.5	OK
ML2-18.002	ML2-88	28.947	27.513	-0.234	0.000	0.30	0.382	1.9	72.8	OK
ML2-18.003	ML2-89	27.560	26.134	-0.226	0.000	0.34	0.390	1.8	72.9	OK
ML2-17.004	ML2-82	27.017	25.557	-0.203	0.000	0.43	0.499	1.9	93.2	OK
ML2-17.005	ML2-90	26.359	24.960	-0.199	0.000	0.45	0.515	2.2	110.5	OK
ML2-16.007	ML2-91	24.761	23.744	0.308	0.000	0.99	3.743	3.1	293.6	SURCHARGED
ML2-16.008	ML2-92	23.496	22.583	0.358	0.000	0.93	3.294	3.2	290.9	SURCHARGED
ML2-16.009	ML2-93	20.639	20.158	0.719	0.000	1.12	4.499	2.7	294.6	SURCHARGED
ML2-20.000	ML2-94A	19.700	18.341	-0.159	0.000	0.18	0.069	1.1	9.9	OK
ML2-4.005	ML2-94	19.418	17.385	0.342	0.000	2.04	13.663	2.3	1231.2	SURCHARGED
ML2-21.000	ML2-01A	22.195	21.614	1.919	0.000	0.38	0.291	0.8	16.6	SURCHARGED
ML2-21.001	ML2-01	22.094	21.595	2.001	0.000	0.68	1.266	0.9	29.4	SURCHARGED
ML2-21.002	ML2-01B	21.986	21.559	2.073	0.000	1.03	1.358	1.0	44.8	SURCHARGED

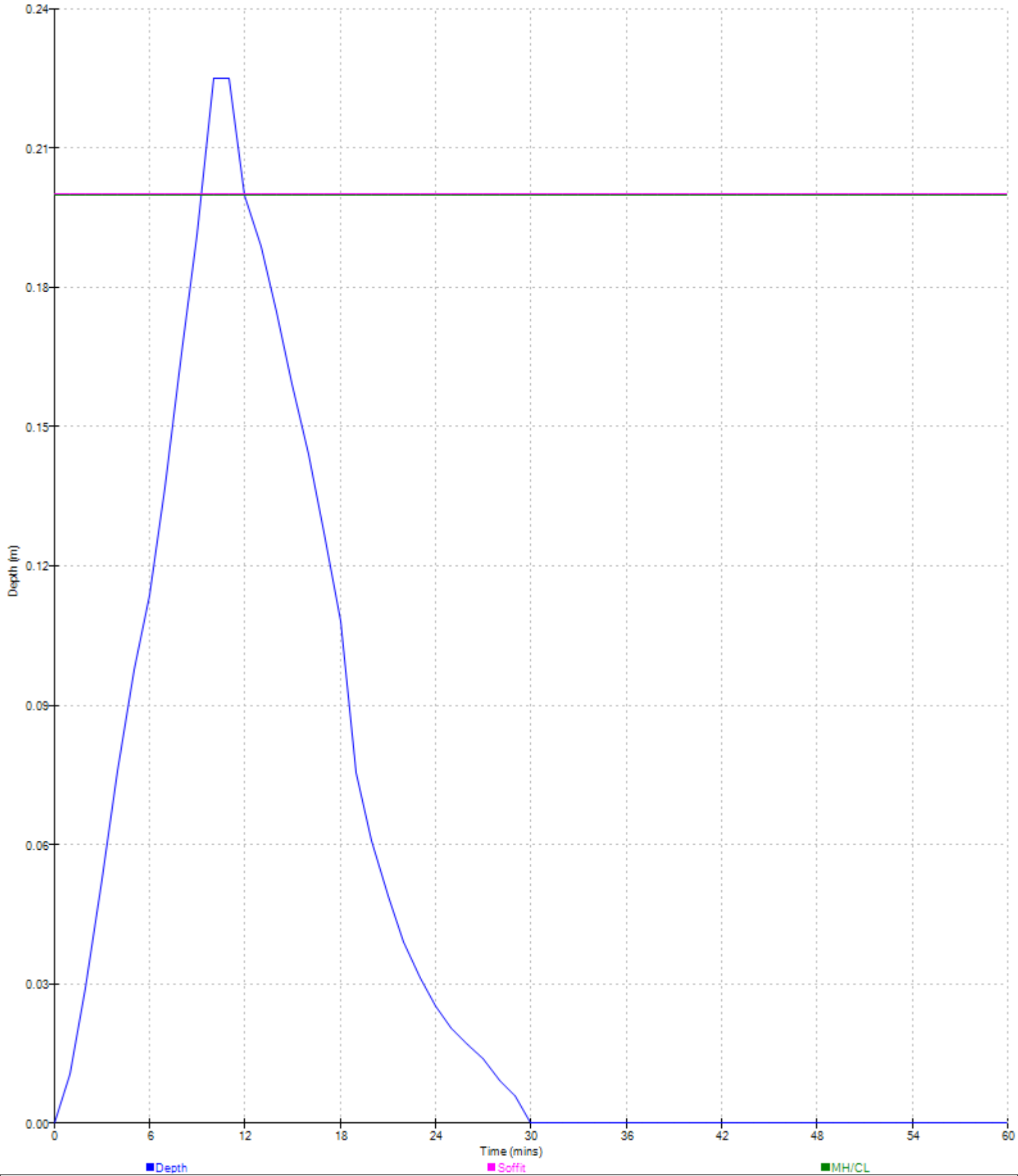
Summary of Results for 30 minute 100 year Winter (SWS-ML02)

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML2-21.003	ML2-02	21.881	21.500	2.119	0.000	0.55	1.343	1.1	58.5	SURCHARGED
ML2-21.004	ML2-02A	21.720	21.464	2.244	0.000	0.71	3.390	1.2	73.4	FLOOD RISK
ML2-21.005	ML2-03	21.583	21.415	2.332	0.000	0.85	2.947	1.2	89.2	FLOOD RISK
ML2-21.006	ML2-03A	21.442	21.338	2.396	0.000	1.02	3.025	1.2	105.5	FLOOD RISK
ML2-21.007	ML2-04	21.312	21.232	2.420	0.000	1.15	2.835	1.2	119.5	FLOOD RISK
ML2-21.008	ML2-04A	21.173	21.080	2.407	0.000	1.30	3.018	1.4	134.9	FLOOD RISK
ML2-21.009	ML2-05	21.045	20.892	2.347	0.000	0.76	2.769	1.3	149.2	FLOOD RISK
ML2-21.010	ML2-05A	20.904	20.818	2.414	0.000	0.86	4.766	1.3	166.4	FLOOD RISK
ML2-21.011	ML2-06	20.773	20.732	2.459	0.000	0.93	4.387	1.3	181.2	FLOOD RISK
ML2-21.012	ML2-06A	20.632	20.623	2.491	0.000	1.03	4.804	1.3	198.0	FLOOD RISK
ML2-21.013	ML2-07	20.504	20.507	2.503	0.355	1.09	4.399	1.3	212.6	FLOOD
ML2-21.014	ML2-07A	20.363	20.376	2.513	0.232	1.17	4.824	1.4	224.6	FLOOD
ML2-21.015	ML2-08	20.235	20.237	2.502	0.737	1.22	4.409	1.5	237.8	FLOOD
ML2-21.016	ML2-08A	20.094	20.095	2.501	0.000	1.31	4.790	1.6	251.7	FLOOD
ML2-21.017	ML2-09	19.966	19.936	2.470	0.000	1.38	4.385	1.7	262.8	FLOOD RISK
ML2-21.018	ML2-09A	19.846	19.760	2.414	0.000	1.62	4.043	1.7	273.4	FLOOD RISK
ML2-21.019	ML2-10	19.762	19.593	2.331	0.000	2.55	11.125	1.6	259.2	FLOOD RISK
ML2-22.000	ML2-11D	22.500	20.696	0.696	0.000	0.29	0.108	0.8	12.4	SURCHARGED
ML2-22.001	ML2-11C	22.403	20.684	0.781	0.000	0.53	1.079	0.9	23.4	SURCHARGED
ML2-22.002	ML2-11B	22.293	20.662	0.869	0.000	0.80	1.181	1.0	34.6	SURCHARGED
ML2-22.003	ML2-11	22.189	20.628	0.939	0.000	0.99	1.154	1.1	44.8	SURCHARGED
ML2-22.004	ML2-11A	22.028	20.572	1.044	0.000	0.60	1.709	1.1	62.9	SURCHARGED
ML2-22.005	ML2-12	21.888	20.542	1.154	0.000	0.68	2.802	1.2	71.8	SURCHARGED
ML2-22.006	ML2-12A	21.746	20.504	1.258	0.000	0.81	2.845	1.2	81.9	SURCHARGED
ML2-22.007	ML2-13	21.621	20.461	1.340	0.000	0.83	2.641	1.2	87.0	SURCHARGED
ML2-22.008	ML2-13A	21.479	20.407	1.428	0.000	0.90	2.860	1.2	92.9	SURCHARGED
ML2-22.009	ML2-14	21.350	20.340	1.490	0.000	1.02	2.675	1.2	105.1	SURCHARGED
ML2-22.010	ML2-14A	21.214	20.248	1.534	0.000	1.12	2.869	1.2	117.2	SURCHARGED
ML2-22.011	ML2-15	21.075	20.134	1.559	0.000	1.22	2.813	1.4	128.6	SURCHARGED
ML2-22.012	ML2-15A	20.932	19.990	1.558	0.000	1.39	2.878	1.5	140.7	SURCHARGED
ML2-22.013	ML2-16	20.814	19.834	1.520	0.000	0.75	2.508	1.3	149.2	SURCHARGED
ML2-22.014	ML2-16A	20.669	19.775	1.606	0.000	0.82	4.631	1.3	157.1	SURCHARGED
ML2-22.015	ML2-17	20.542	19.710	1.668	0.000	0.87	4.258	1.3	167.1	SURCHARGED
ML2-22.016	ML2-17A	20.405	19.632	1.727	0.000	0.92	4.645	1.3	176.0	SURCHARGED
ML2-22.017	ML2-18	20.277	19.558	1.781	0.000	0.96	4.316	1.3	182.0	SURCHARGED
ML2-22.018	ML2-18A	20.158	19.477	1.819	0.000	0.51	4.015	2.0	188.5	SURCHARGED
ML2-21.020	ML2-19	20.089	19.421	2.114	0.000	2.17	12.326	2.0	436.1	SURCHARGED
ML2-21.021	ML2-20	20.216	19.165	1.904	0.000	2.08	10.925	2.0	416.1	SURCHARGED
ML2-23.000	ML2-21	20.002	19.960	-0.042	0.000	0.42	0.000	0.7	38.2	FLOOD RISK
ML2-23.001	ML2-22	19.729	18.630	0.101	0.000	0.23	1.102	0.9	38.2	SURCHARGED
ML2-21.022	ML2-23	20.103	18.624	1.507	0.000	2.01	19.070	2.0	414.1	SURCHARGED
ML2-21.023	ML2-24	19.682	17.705	0.816	0.000	1.80	22.347	1.9	401.3	SURCHARGED
ML2-4.006	ML2-FB	17.600	16.830	-0.170	0.000	1.00	421.818	2.6	1425.9	OK
ML2-4.007	ML2-IB	17.600	16.035	-0.965	0.000	0.00	2364.506	0.0	0.0	OK
ML2-24.000	ML2-95A	17.451	17.390	-0.210	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.001	ML2-95	18.241	16.741	-0.300	0.000	0.00	0.000	0.0	0.0	OK
ML2-24.002	ML2-96	17.919	16.348	-0.300	0.000	0.00	0.000	0.0	0.0	OK

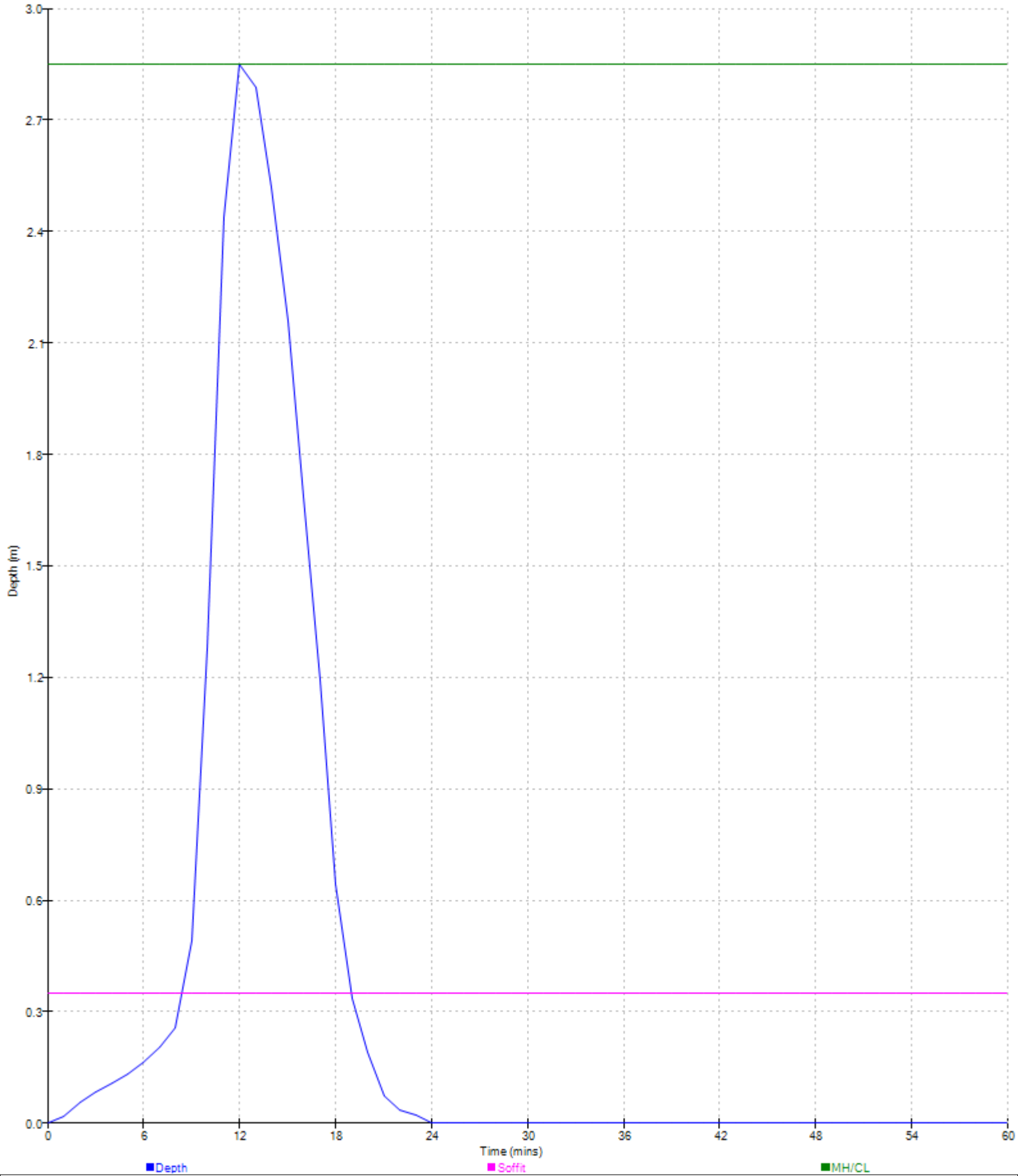
Graphs for Pipe ML2-4.002 US/MH ML2-27 (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



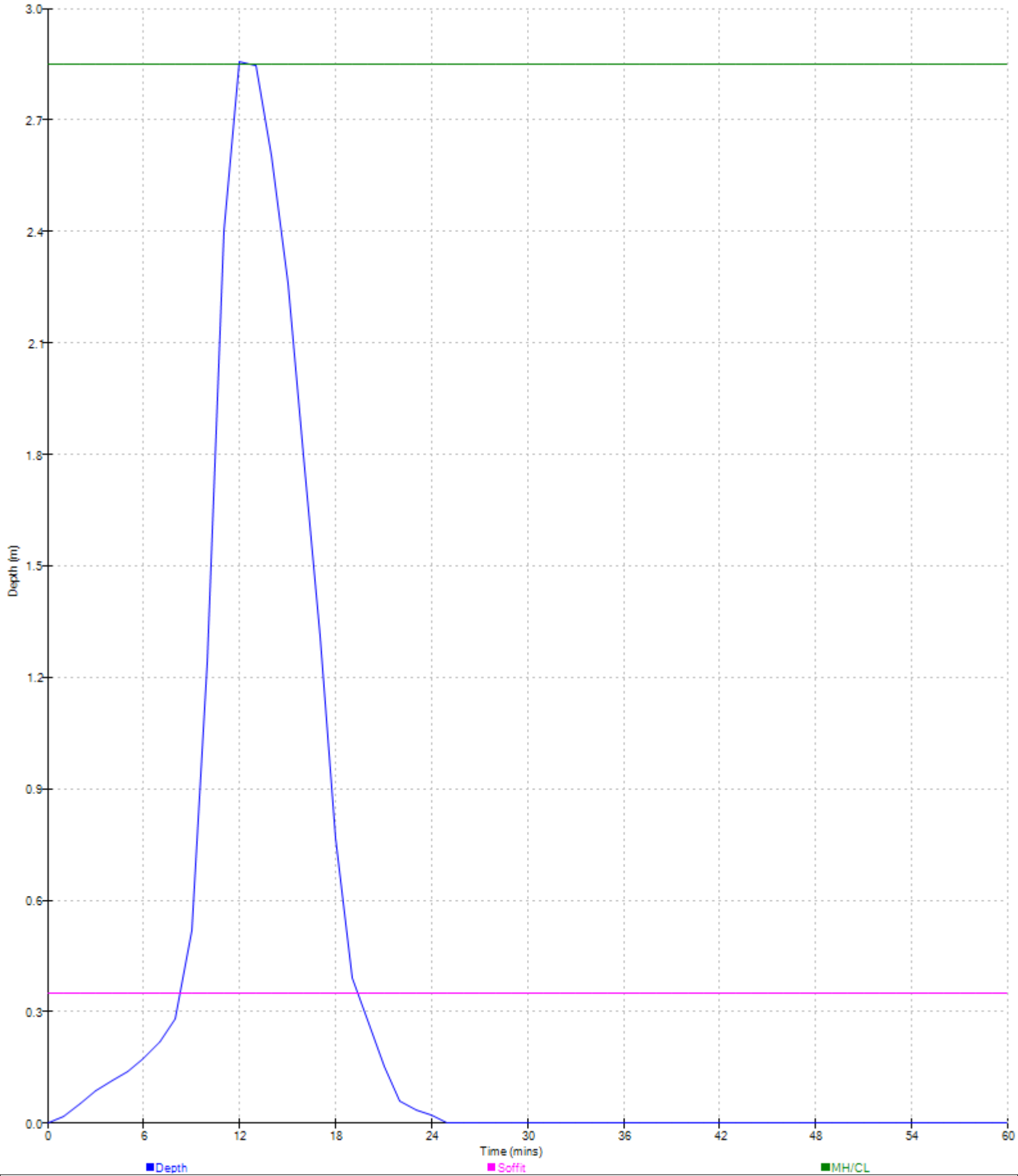
Graphs for Pipe ML2-6.002 US/MH ML2-31 (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



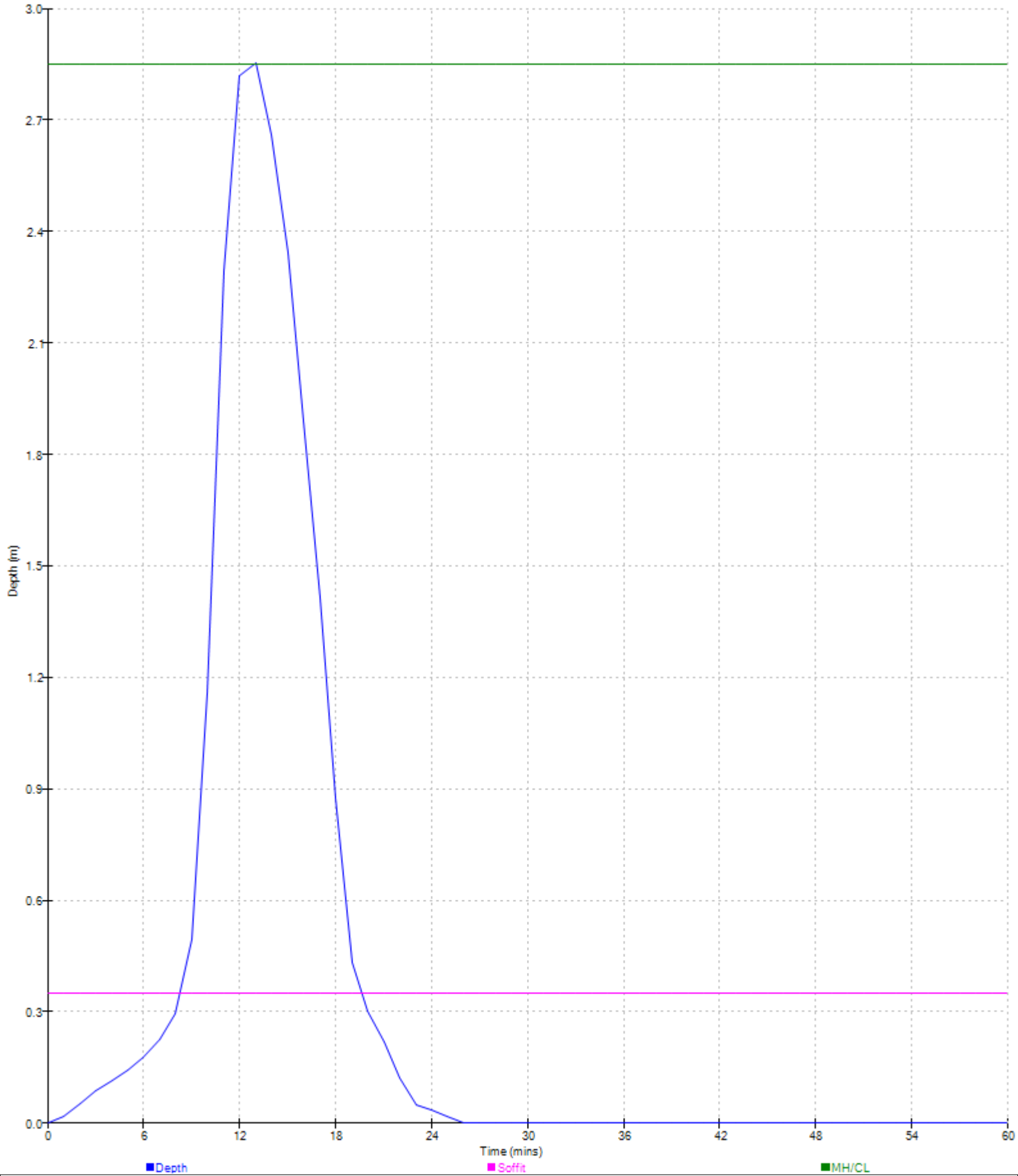
Graphs for Pipe ML2-21.005 US/MH ML2-03 (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



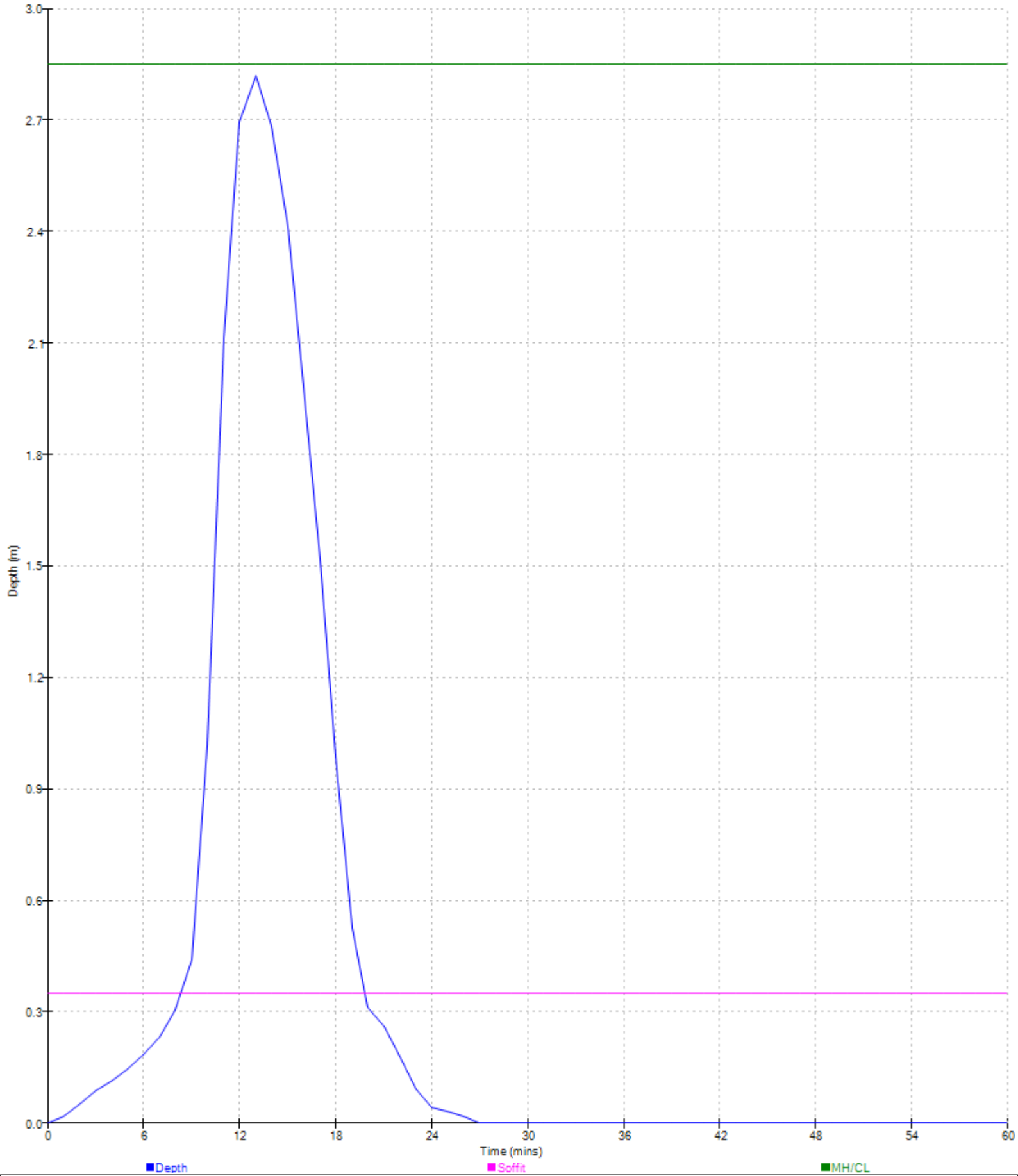
Graphs for Pipe ML2-21.006 US/MH ML2-03A (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



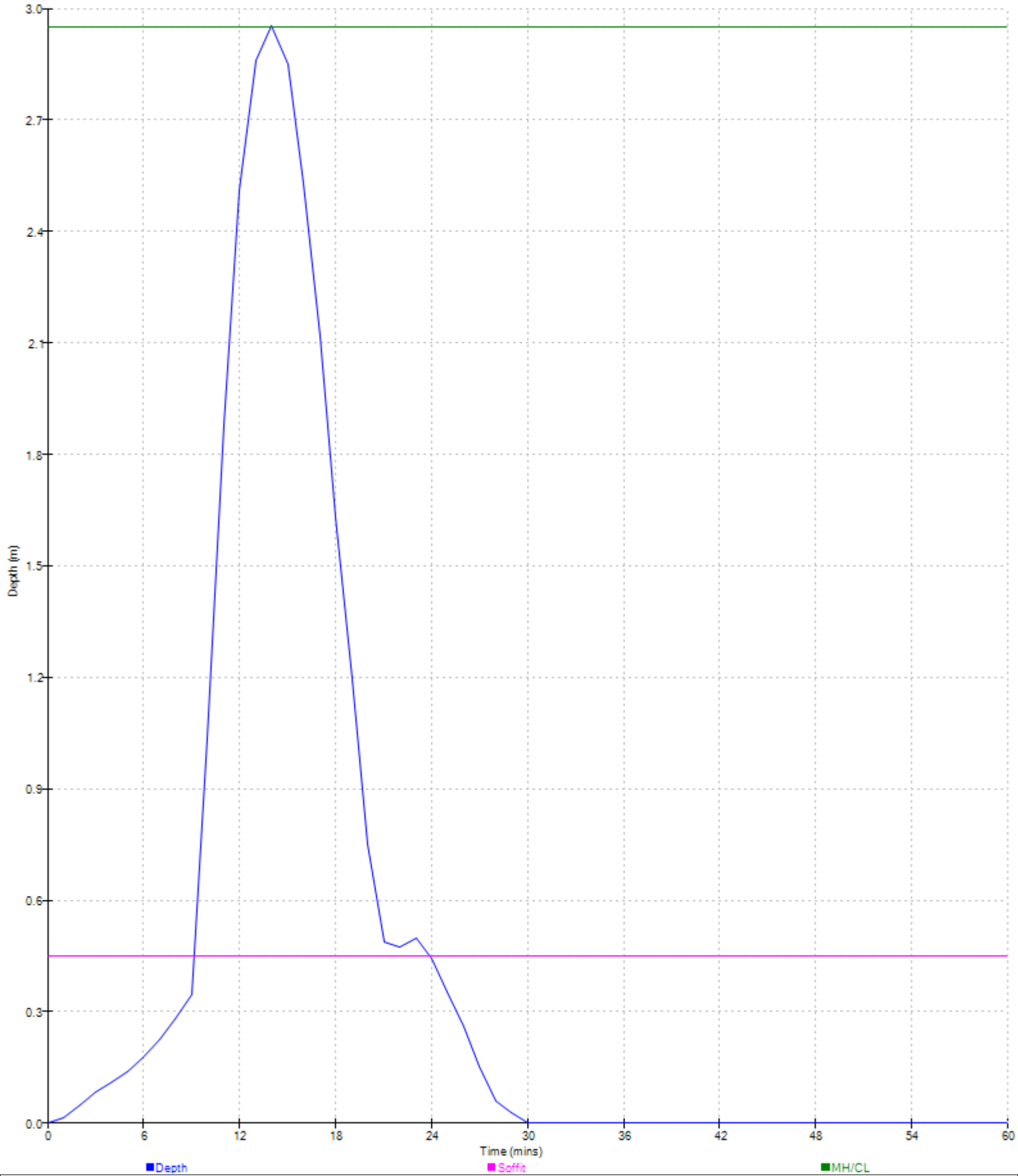
Graphs for Pipe ML2-21.007 US/MH ML2-04 (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



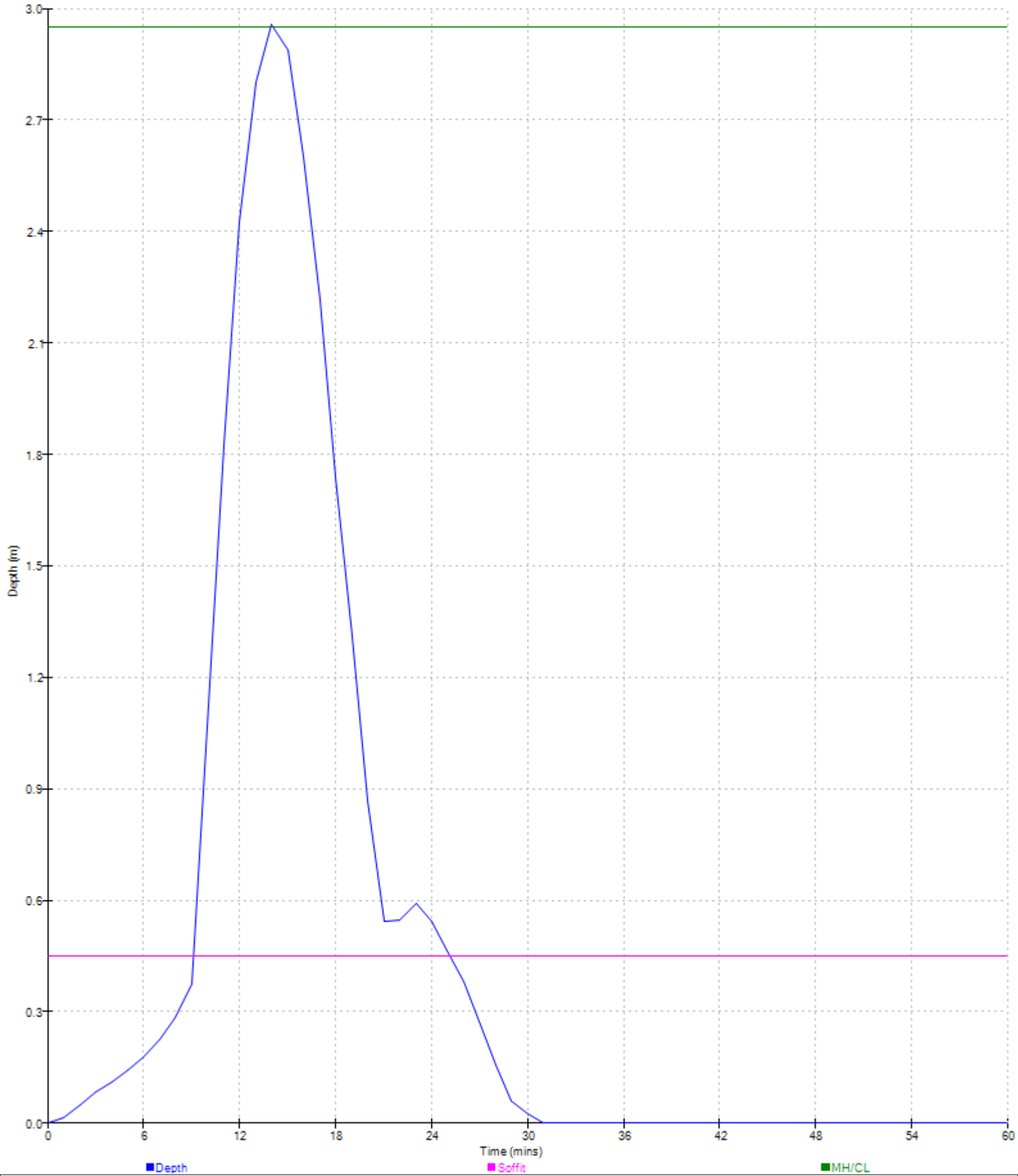
Graphs for Pipe ML2-21.008 US/MH ML2-04A (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD RISK



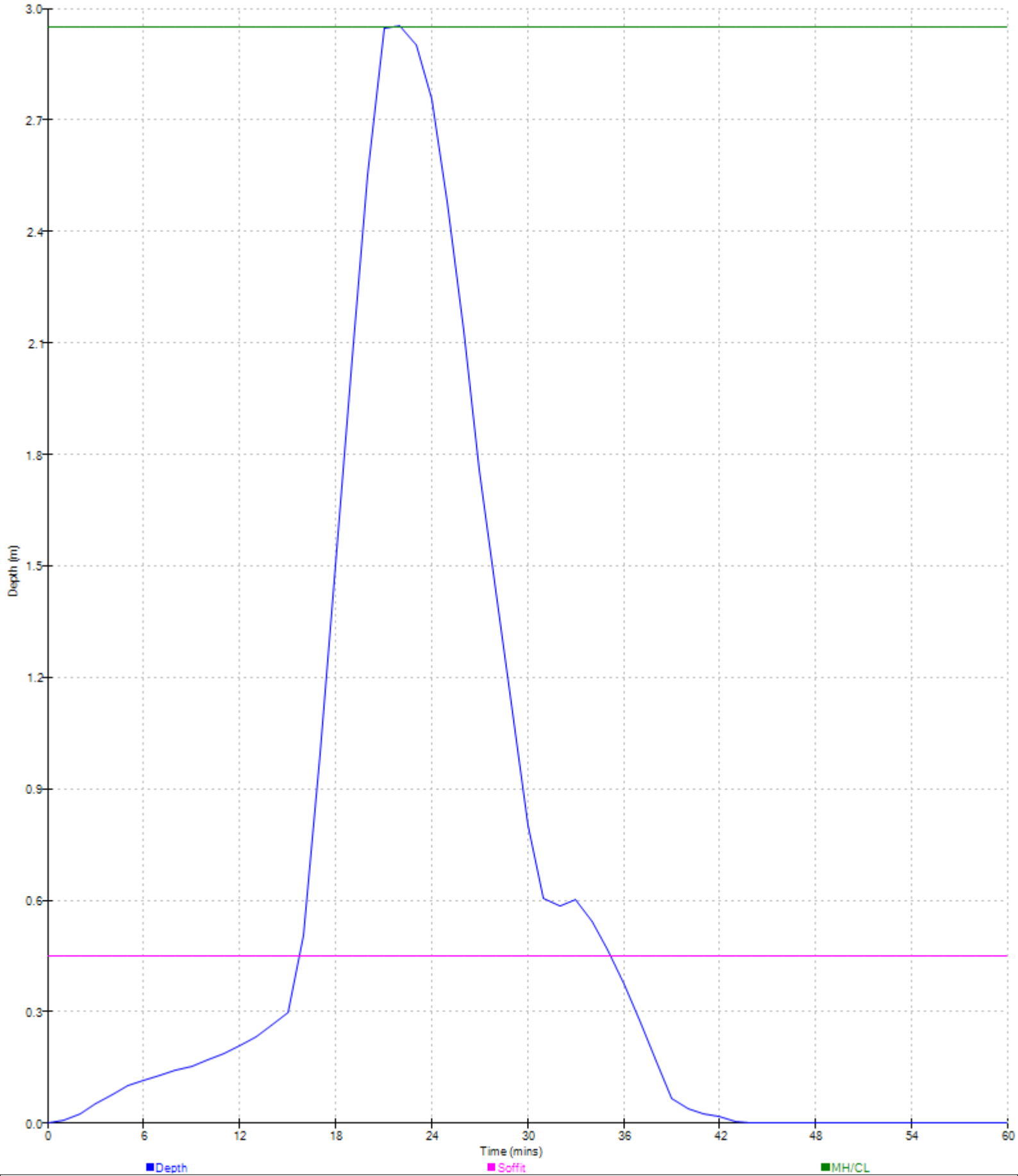
Graphs for Pipe ML2-21.013 US/MH ML2-07 (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



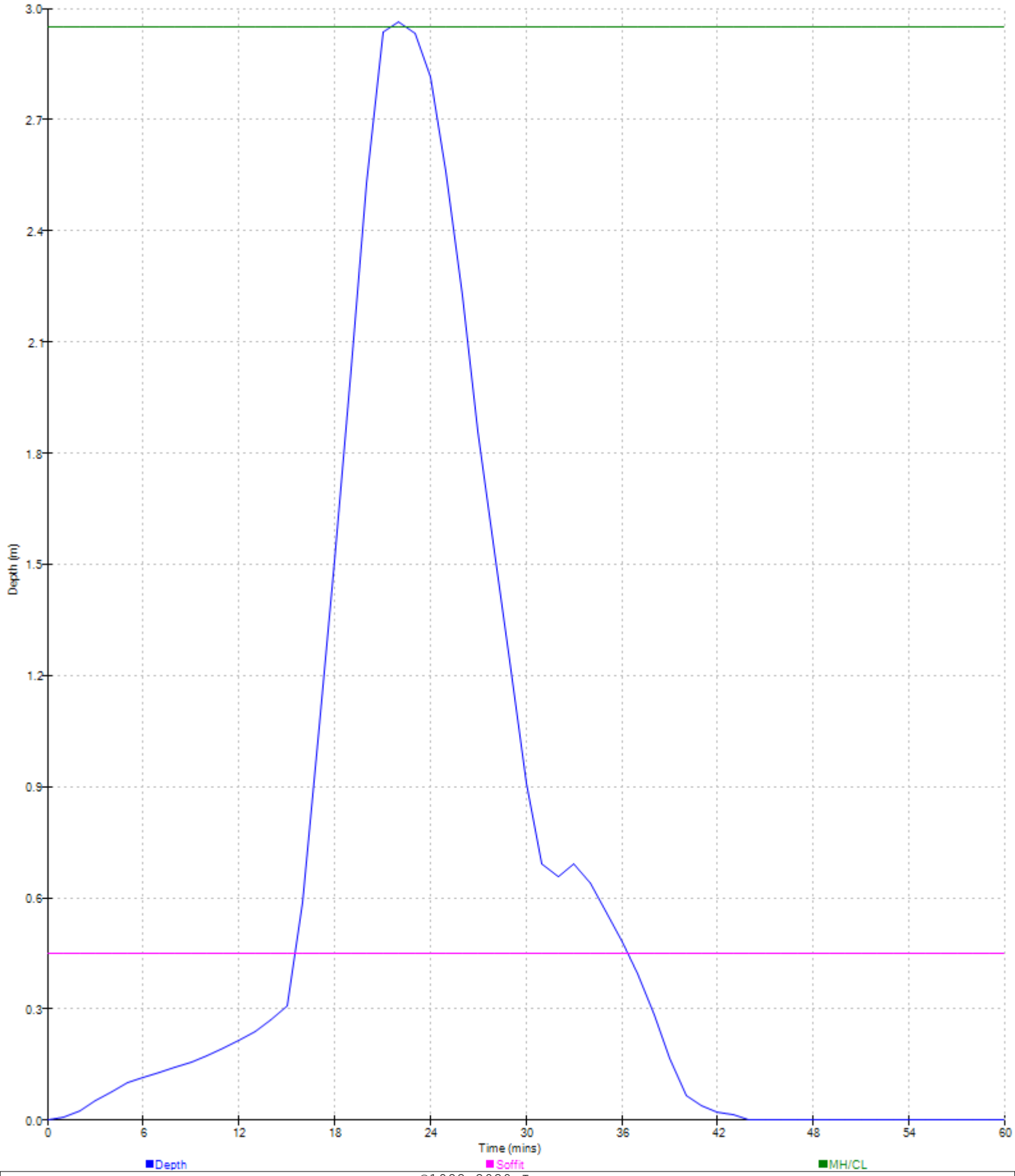
Graphs for Pipe ML2-21.014 US/MH ML2-07A (SWS-ML02)
15 minute 100 year Winter
Status: FLOOD



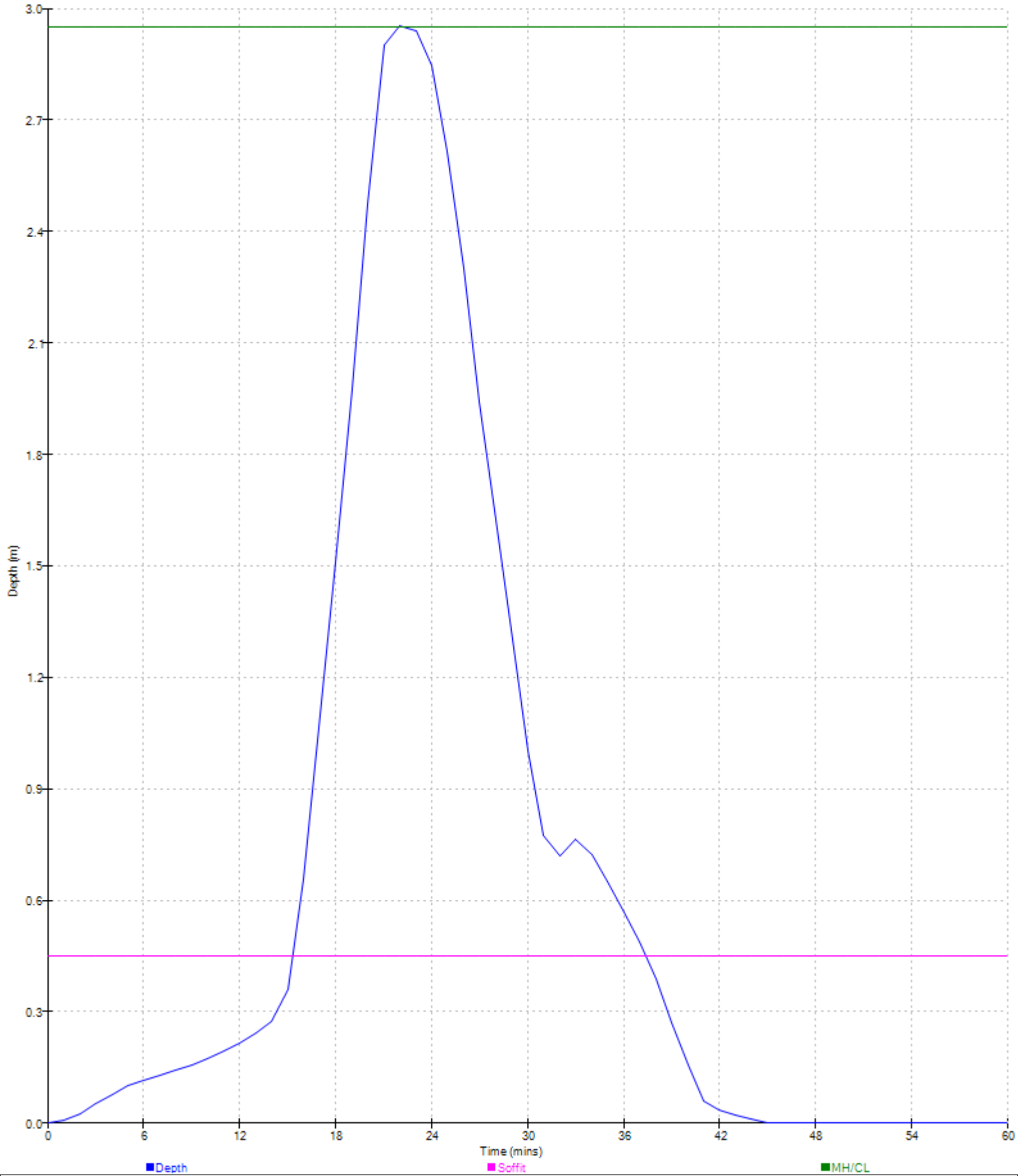
Graphs for Pipe ML2-21.013 US/MH ML2-07 (SWS-ML02)
30 minute 100 year Winter
Status: FLOOD



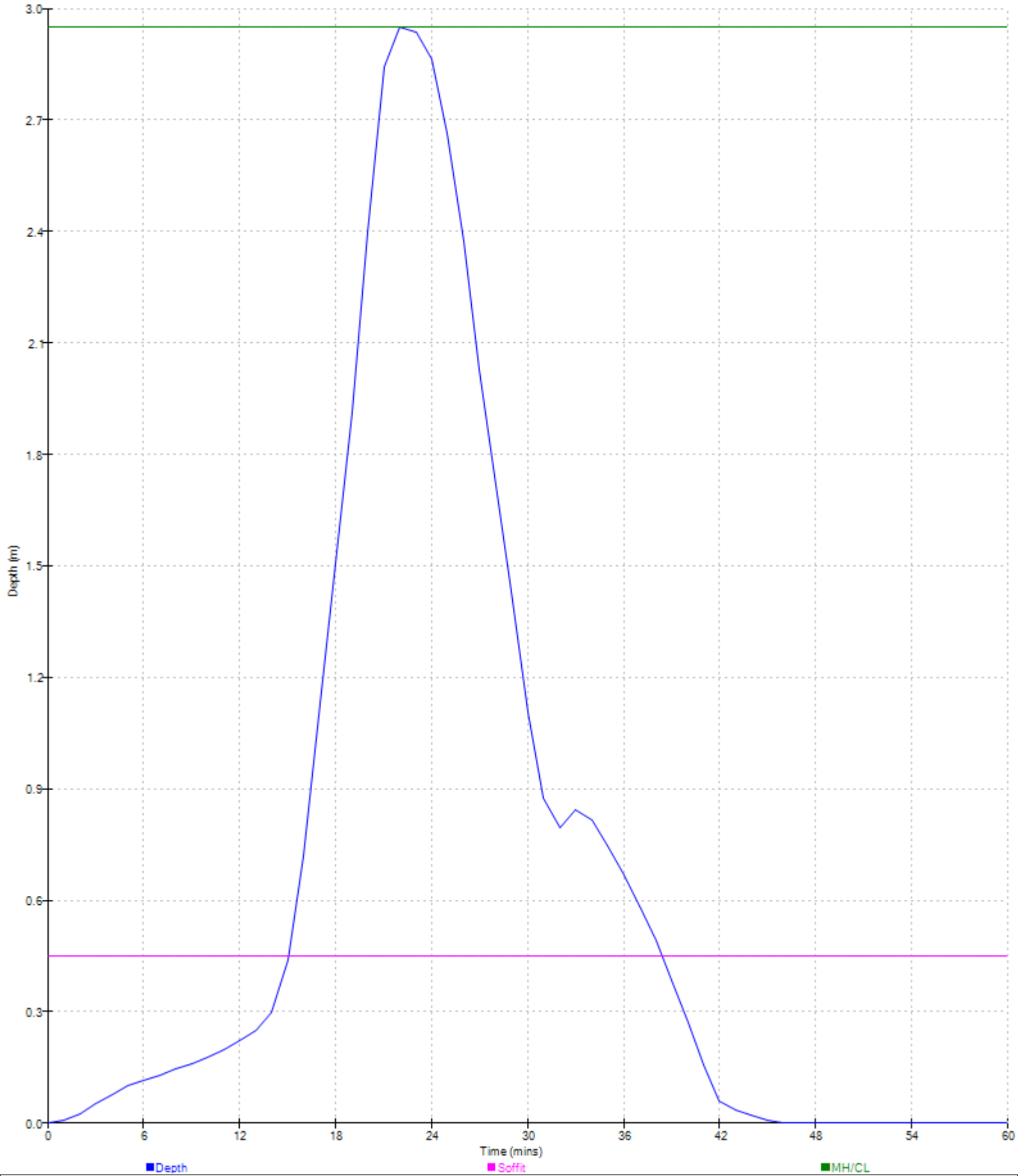
Graphs for Pipe ML2-21.014 US/MH ML2-07A (SWS-ML02)
30 minute 100 year Winter
Status: FLOOD



Graphs for Pipe ML2-21.015 US/MH ML2-08 (SWS-ML02)
30 minute 100 year Winter
Status: FLOOD



Graphs for Pipe ML2-21.016 US/MH ML2-08A (SWS-ML02)
30 minute 100 year Winter
Status: FLOOD



Catchment 3 Basin 3 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:10 no flooding check
All pipes pass for 1:10
1:30 no flooding check
All pipes pass for 1:30
1:100 flooding check
No flooding for 1:100

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-ML03

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 610500 313350 TG 10500 13350	PIMP (%)	100
C (1km)	-0.024	Add Flow / Climate Change (%)	20
D1 (1km)	0.305	Minimum Backdrop Height (m)	0.200
D2 (1km)	0.305	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.270	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.313	Min Vel for Auto Design only (m/s)	1.00
F (1km)	2.473	Min Slope for Optimisation (1:X)	200
Maximum Rainfall (mm/hr)	250		

Designed with Level Soffits

Time Area Diagram for SWS-ML03 at outfall ML3-** (pipe ML3-1.013)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.476	4-8	0.122	8-12	0.259	12-16	0.213	16-20	0.188	20-24	0.169	24-28	0.064

Total Area Contributing (ha) = 1.492

Total Pipe Volume (m³) = 384.371

Time Area Diagram at outfall ML3-20 (pipe ML3-3.000)

Time (mins)	Area (ha)
0-4	0.000

Total Area Contributing (ha) = 0.000

Total Pipe Volume (m³) = 1.765

Network Design Table for SWS-ML03

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML3-1.000	57.300	0.785	73.0	0.078	5.00	0.0		0.015	5 \/	150	1:5 V	
ML3-1.001	97.279	0.794	122.5	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML3-1.002	97.508	1.005	97.0	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML3-1.003	97.005	0.996	97.4	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML3-1.004	96.929	1.151	84.2	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML3-1.005	96.223	0.788	122.1	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML3-1.006	65.647	0.604	108.7	0.000	0.00	0.0	1.500		o	450	Pipe/Conduit	
ML3-2.000	98.545	1.015	97.1	0.169	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML3-2.001	97.751	0.996	98.1	0.161	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML3-2.002	97.112	0.989	98.2	0.158	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML3-2.003	96.973	0.989	98.1	0.162	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML3-2.004	96.686	0.985	98.2	0.161	0.00	0.0		0.050	2V	-3	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML3-1.000	60.90	5.70	36.862	0.078	0.0	0.0	2.6	1.37	154.1	15.5
ML3-1.001	52.83	6.99	34.727	0.078	0.0	0.0	2.6	1.25	88.5	15.5
ML3-1.002	47.50	8.15	33.933	0.078	0.0	0.0	2.6	1.41	99.5	15.5
ML3-1.003	43.85	9.14	32.853	0.078	0.0	0.0	2.6	1.63	179.5	15.5
ML3-1.004	41.01	10.06	31.857	0.078	0.0	0.0	2.6	1.75	193.1	15.5
ML3-1.005	38.14	11.17	30.706	0.078	0.0	0.0	2.6	1.45	160.2	15.5
ML3-1.006	36.71	11.80	29.843	0.078	0.0	0.0	2.6	1.73	275.2	15.5
ML3-2.000	46.91	8.30	36.052	0.169	0.0	0.0	4.3	0.50	246.7	25.7
ML3-2.001	37.20	11.58	35.037	0.330	0.0	0.0	6.7	0.50	245.4	39.9
ML3-2.002	31.30	14.85	34.041	0.488	0.0	0.0	8.3	0.50	245.3	49.7
ML3-2.003	27.27	18.11	33.052	0.650	0.0	0.0	9.6	0.50	245.5	57.6
ML3-2.004	24.31	21.36	32.063	0.811	0.0	0.0	10.7	0.50	245.4	64.1

Network Design Table for SWS-ML03

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML3-2.005	65.190	0.389	167.6	0.095	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML3-1.007	21.592	0.216	100.0	0.023	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-1.008	68.721	4.268	16.1	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-1.009	38.251	1.495	25.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-1.010	24.218	0.093	260.4	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-1.011	24.833	0.092	269.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-1.012	25.451	0.036	707.0	0.111	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-1.013	20.009	1.000	20.0	0.374	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML3-3.000	11.427	0.286	40.0	0.000	5.00	0.0		0.015	g	-4	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML3-2.005	22.28	24.22	31.078	0.906	0.0	0.0	10.9	0.38	187.8	65.6
ML3-1.007	22.17	24.38	29.164	1.007	0.0	0.0	12.1	2.24	485.0	72.6
ML3-1.008	22.04	24.59	28.948	1.007	0.0	0.0	12.1	5.60	1212.7	72.6
ML3-1.009	21.96	24.73	24.680	1.007	0.0	0.0	12.1	4.44	961.4	72.6
ML3-1.010	21.78	25.02	23.185	1.007	0.0	0.0	12.1	1.38	299.4	72.6
ML3-1.011	21.59	25.33	23.092	1.007	0.0	0.0	12.1	1.36	294.1	72.6
ML3-1.012	21.30	25.83	23.000	1.118	0.0	0.0	12.9	0.83	180.7	77.4
ML3-1.013	21.26	25.90	22.964	1.492	0.0	0.0	17.2	5.02	1087.5	103.1
ML3-3.000	66.06	5.07	24.290	0.000	0.0	0.0	0.0	2.79	430.4	0.0

Conduit Sections for SWS-ML03

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-3	2V	4001	200			0.487	0.495
-4	g	1000	210			0.544	0.155

Manhole Schedules for SWS-ML03

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)
ML3-01	37.097	0.235	Open Manhole	10	ML3-1.000	36.862	150				
ML3-02	36.316	1.589	Open Manhole	1500	ML3-1.001	34.727	300	ML3-1.000	36.077	150	1200
ML3-03	35.449	1.516	Open Manhole	1500	ML3-1.002	33.933	300	ML3-1.001	33.933	300	
ML3-04	34.449	1.596	Open Manhole	1500	ML3-1.003	32.853	375	ML3-1.002	32.928	300	
ML3-05	33.456	1.599	Open Manhole	1500	ML3-1.004	31.857	375	ML3-1.003	31.857	375	
ML3-06	32.366	1.660	Open Manhole	1500	ML3-1.005	30.706	375	ML3-1.004	30.706	375	
ML3-07	31.507	1.664	Open Manhole	1500	ML3-1.006	29.843	450	ML3-1.005	29.918	375	
ML3-08	36.339	0.287	Open Manhole	10	ML3-2.000	36.052	-3				
ML3-09	35.329	0.292	Open Manhole	10	ML3-2.001	35.037	-3	ML3-2.000	35.037	-3	
ML3-10	34.333	0.292	Open Manhole	10	ML3-2.002	34.041	-3	ML3-2.001	34.041	-3	
ML3-11	33.343	0.291	Open Manhole	10	ML3-2.003	33.052	-3	ML3-2.002	33.052	-3	
ML3-12	32.355	0.292	Open Manhole	10	ML3-2.004	32.063	-3	ML3-2.003	32.063	-3	
ML3-13	31.278	0.200	Open Manhole	10	ML3-2.005	31.078	-3	ML3-2.004	31.078	-3	
ML3-14	30.940	1.776	Open Manhole	1500	ML3-1.007	29.164	525	ML3-1.006	29.239	450	
								ML3-2.005	30.689	-3	1200
ML3-15	31.988	3.040	Open Manhole	1800	ML3-1.008	28.948	525	ML3-1.007	28.948	525	
ML3-16	26.405	1.725	Open Manhole	1500	ML3-1.009	24.680	525	ML3-1.008	24.680	525	
ML3-17	25.091	1.906	Open Manhole	1800	ML3-1.010	23.185	525	ML3-1.009	23.185	525	
ML3-18	24.544	1.452	Open Manhole	1800	ML3-1.011	23.092	525	ML3-1.010	23.092	525	
ML3-FB	24.500	1.500	Open Manhole	1500	ML3-1.012	23.000	525	ML3-1.011	23.000	525	
ML3-IB	24.500	1.536	Open Manhole	1500	ML3-1.013	22.964	525	ML3-1.012	22.964	525	
ML3-**	22.500	0.536	Open Manhole	1500		OUTFALL		ML3-1.013	21.964	525	
ML3-19	24.500	0.210	Junction		ML3-3.000	24.290	-4				
ML3-20	23.759	0.000	Open Manhole	1500		OUTFALL		ML3-3.000	24.004	-4	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML3-01	15986.459	525529.258	15986.459	525529.258	Required	
ML3-02	16026.659	525570.090	16026.659	525570.090	Required	
ML3-03	16096.596	525637.706	16096.596	525637.706	Required	
ML3-04	16166.734	525705.445	16166.734	525705.445	Required	
ML3-05	16236.527	525772.815	16236.527	525772.815	Required	
ML3-06	16305.720	525840.694	16305.720	525840.694	Required	
ML3-07	16375.754	525906.680	16375.754	525906.680	Required	
ML3-08	16024.811	525569.575	16024.811	525569.575	Required	
ML3-09	16094.900	525638.847	16094.900	525638.847	Required	
ML3-10	16165.526	525706.429	16165.526	525706.429	Required	
ML3-11	16235.481	525773.787	16235.481	525773.787	Required	
ML3-12	16305.282	525841.104	16305.282	525841.104	Required	
ML3-13	16375.217	525907.867	16375.217	525907.867	Required	

Manhole Schedules for SWS-ML03

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML3-14	16421.847	525953.423	16421.847	525953.423	Required	
ML3-15	16408.806	525970.633	16408.806	525970.633	Required	
ML3-16	16443.185	526030.137	16443.185	526030.137	Required	
ML3-17	16454.748	526066.599	16454.748	526066.599	Required	
ML3-18	16471.514	526084.076	16471.514	526084.076	Required	
ML3-FB	16493.891	526094.842	16493.891	526094.842	Required	
ML3-IB	16469.390	526101.731	16469.390	526101.731	Required	
ML3-**	16450.222	526107.474			No Entry	
ML3-19	16499.294	526090.338			No Entry	
ML3-20	16507.905	526082.828			No Entry	

PIPELINE SCHEDULES for SWS-ML03

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)
ML3-1.000	5 \/	150	ML3-01	37.097	36.862	0.085	Open Manhole	10
ML3-1.001	o	300	ML3-02	36.316	34.727	1.289	Open Manhole	1500
ML3-1.002	o	300	ML3-03	35.449	33.933	1.216	Open Manhole	1500
ML3-1.003	o	375	ML3-04	34.449	32.853	1.221	Open Manhole	1500
ML3-1.004	o	375	ML3-05	33.456	31.857	1.224	Open Manhole	1500
ML3-1.005	o	375	ML3-06	32.366	30.706	1.285	Open Manhole	1500
ML3-1.006	o	450	ML3-07	31.507	29.843	1.214	Open Manhole	1500
ML3-2.000	2V	-3	ML3-08	36.339	36.052	0.087	Open Manhole	10
ML3-2.001	2V	-3	ML3-09	35.329	35.037	0.092	Open Manhole	10
ML3-2.002	2V	-3	ML3-10	34.333	34.041	0.092	Open Manhole	10
ML3-2.003	2V	-3	ML3-11	33.343	33.052	0.091	Open Manhole	10
ML3-2.004	2V	-3	ML3-12	32.355	32.063	0.092	Open Manhole	10
ML3-2.005	2V	-3	ML3-13	31.278	31.078	0.000	Open Manhole	10
ML3-1.007	o	525	ML3-14	30.940	29.164	1.251	Open Manhole	1500
ML3-1.008	o	525	ML3-15	31.988	28.948	2.515	Open Manhole	1800
ML3-1.009	o	525	ML3-16	26.405	24.680	1.200	Open Manhole	1500
ML3-1.010	o	525	ML3-17	25.091	23.185	1.381	Open Manhole	1800
ML3-1.011	o	525	ML3-18	24.544	23.092	0.927	Open Manhole	1800
ML3-1.012	o	525	ML3-FB	24.500	23.000	0.975	Open Manhole	1500
ML3-1.013	o	525	ML3-IB	24.500	22.964	1.011	Open Manhole	1500
ML3-3.000	g	-4	ML3-19	24.500	24.290	0.000	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)
ML3-1.000	57.300	73.0	ML3-02	36.316	36.077	0.089	Open Manhole	1500
ML3-1.001	97.279	122.5	ML3-03	35.449	33.933	1.216	Open Manhole	1500
ML3-1.002	97.508	97.0	ML3-04	34.449	32.928	1.221	Open Manhole	1500
ML3-1.003	97.005	97.4	ML3-05	33.456	31.857	1.224	Open Manhole	1500
ML3-1.004	96.929	84.2	ML3-06	32.366	30.706	1.285	Open Manhole	1500
ML3-1.005	96.223	122.1	ML3-07	31.507	29.918	1.214	Open Manhole	1500
ML3-1.006	65.647	108.7	ML3-14	30.940	29.239	1.251	Open Manhole	1500
ML3-2.000	98.545	97.1	ML3-09	35.329	35.037	0.092	Open Manhole	10
ML3-2.001	97.751	98.1	ML3-10	34.333	34.041	0.092	Open Manhole	10
ML3-2.002	97.112	98.2	ML3-11	33.343	33.052	0.091	Open Manhole	10
ML3-2.003	96.973	98.1	ML3-12	32.355	32.063	0.092	Open Manhole	10
ML3-2.004	96.686	98.2	ML3-13	31.278	31.078	0.000	Open Manhole	10
ML3-2.005	65.190	167.6	ML3-14	30.940	30.689	0.051	Open Manhole	1500
ML3-1.007	21.592	100.0	ML3-15	31.988	28.948	2.515	Open Manhole	1800
ML3-1.008	68.721	16.1	ML3-16	26.405	24.680	1.200	Open Manhole	1500
ML3-1.009	38.251	25.6	ML3-17	25.091	23.185	1.381	Open Manhole	1800
ML3-1.010	24.218	260.4	ML3-18	24.544	23.092	0.927	Open Manhole	1800
ML3-1.011	24.833	269.9	ML3-FB	24.500	23.000	0.975	Open Manhole	1500
ML3-1.012	25.451	707.0	ML3-IB	24.500	22.964	1.011	Open Manhole	1500
ML3-1.013	20.009	20.0	ML3-**	22.500	21.964	0.011	Open Manhole	1500
ML3-3.000	11.427	40.0	ML3-20	23.759	24.004	-0.455	Open Manhole	1500

Free Flowing Outfall Details for SWS-ML03

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML3-1.013	ML3-**	22.500	21.964	0.000	1500	0

Free Flowing Outfall Details for SWS-ML03

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML3-3.000	ML3-20	23.759	24.004	0.000	1500	0

Online Controls for SWS-ML03

Pump Manhole: ML3-IB, DS/PN: ML3-1.013, Volume (m³): 7.9

Invert Level (m) 22.964

Depth (m)	Flow (l/s)
5.000	0.0000

Offline Controls for SWS-ML03

Pipe Manhole: ML3-08, DS/PN: ML3-2.000, Loop to PN: ML3-1.001

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	36.052
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML3-09, DS/PN: ML3-2.001, Loop to PN: ML3-1.002

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	35.037
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML3-10, DS/PN: ML3-2.002, Loop to PN: ML3-1.003

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	34.041
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML3-11, DS/PN: ML3-2.003, Loop to PN: ML3-1.004

Diameter (m)	0.375	Length (m)	3.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	33.052
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML3-12, DS/PN: ML3-2.004, Loop to PN: ML3-1.005

Diameter (m)	0.375	Length (m)	3.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	32.063
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML3-13, DS/PN: ML3-2.005, Loop to PN: ML3-1.006

Diameter (m)	0.375	Length (m)	3.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.078
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Storage Structures for SWS-ML03

Infiltration Basin Manhole: ML3-FB, DS/PN: ML3-1.012

Invert Level (m) 23.000 Infiltration Coefficient Side (m/hr) 0.01098 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	177.1	1.500	467.0

Infiltration Basin Manhole: ML3-IB, DS/PN: ML3-1.013

Invert Level (m) 22.500 Infiltration Coefficient Side (m/hr) 0.01098 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.01098 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1273.6	1.600	2159.9	1.601	2486.3	2.000	2801.8

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML03

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	6	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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
Climate Change (%)	20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML3-1.000	ML3-01	15 minute 1 year Winter I+20%	37.097	36.922	-0.090	0.000	0.09	0.000	0.7	13.1	FLOOD RISK
ML3-1.001	ML3-02	15 minute 1 year Winter I+20%	36.316	34.817	-0.210	0.000	0.18	0.172	1.0	15.8	OK
ML3-1.002	ML3-03	15 minute 1 year Winter I+20%	35.449	34.028	-0.205	0.000	0.22	0.253	1.1	21.5	OK
ML3-1.003	ML3-04	15 minute 1 year Winter I+20%	34.449	32.954	-0.274	0.000	0.16	0.172	1.2	27.5	OK
ML3-1.004	ML3-05	15 minute 1 year Winter I+20%	33.456	31.974	-0.258	0.000	0.21	0.341	1.4	39.3	OK
ML3-1.005	ML3-06	15 minute 1 year Winter I+20%	32.366	30.855	-0.226	0.000	0.32	0.486	1.3	50.2	OK
ML3-1.006	ML3-07	15 minute 1 year Winter I+20%	31.507	29.993	-0.300	0.000	0.24	0.350	1.4	62.6	OK
ML3-2.000	ML3-08	15 minute 1 year Winter I+20%	36.339	36.116	-0.136	0.000	0.08	0.000	0.3	20.8	FLOOD RISK
ML3-2.001	ML3-09	15 minute 1 year Winter I+20%	35.329	35.116	-0.121	0.000	0.13	0.522	0.3	32.6	FLOOD RISK
ML3-2.002	ML3-10	15 minute 1 year Winter I+20%	34.333	34.128	-0.113	0.000	0.17	0.588	0.3	40.5	FLOOD RISK
ML3-2.003	ML3-11	15 minute 1 year Winter I+20%	33.343	33.139	-0.113	0.000	0.17	0.588	0.3	41.2	FLOOD RISK
ML3-2.004	ML3-12	15 minute 1 year Winter I+20%	32.355	32.149	-0.114	0.000	0.17	0.581	0.3	40.6	FLOOD RISK
ML3-2.005	ML3-13	15 minute 1 year Winter I+20%	31.278	31.166	-0.112	0.000	0.19	0.598	0.2	34.9	FLOOD RISK
ML3-1.007	ML3-14	15 minute 1 year Winter I+20%	30.940	29.351	-0.338	0.000	0.28	0.484	1.4	98.6	OK
ML3-1.008	ML3-15	15 minute 1 year Winter I+20%	31.988	29.053	-0.420	0.000	0.09	0.363	3.2	98.4	OK
ML3-1.009	ML3-16	15 minute 1 year Winter I+20%	26.405	24.800	-0.405	0.000	0.12	0.233	2.7	98.4	OK
ML3-1.010	ML3-17	15 minute 1 year Winter I+20%	25.091	23.418	-0.292	0.000	0.41	0.804	1.1	98.5	OK
ML3-1.011	ML3-18	15 minute 1 year Winter I+20%	24.544	23.326	-0.291	0.000	0.41	2.038	1.1	98.0	OK
ML3-1.012	ML3-FB	30 minute 1 year Winter I+20%	24.500	23.255	-0.270	0.000	0.48	52.211	0.6	59.5	OK
ML3-1.013	ML3-IB	4320 minute 1 year Winter I+20%	24.500	22.836	-0.653	0.000	0.00	456.594	0.0	0.0	OK
ML3-3.000	ML3-19	15 minute 1 year Summer I+20%	24.500	24.290	-0.210	0.000	0.00	0.000	0.0	0.0	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML03

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	6	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML3-1.000	ML3-01	15 minute 5 year Winter I+20%	37.097	36.933	-0.079	0.000	0.14	0.000	0.8	20.8	FLOOD RISK
ML3-1.001	ML3-02	15 minute 5 year Winter I+20%	36.316	34.842	-0.185	0.000	0.29	0.223	1.1	25.0	OK
ML3-1.002	ML3-03	15 minute 5 year Winter I+20%	35.449	34.056	-0.177	0.000	0.34	0.386	1.3	32.8	OK
ML3-1.003	ML3-04	15 minute 5 year Winter I+20%	34.449	32.980	-0.248	0.000	0.24	0.248	1.3	42.4	OK
ML3-1.004	ML3-05	15 minute 5 year Winter I+20%	33.456	32.007	-0.225	0.000	0.33	0.526	1.5	61.7	OK
ML3-1.005	ML3-06	15 minute 5 year Winter I+20%	32.366	30.900	-0.181	0.000	0.51	0.718	1.4	79.7	OK
ML3-1.006	ML3-07	15 minute 5 year Winter I+20%	31.507	30.037	-0.256	0.000	0.38	0.513	1.5	99.4	OK
ML3-2.000	ML3-08	15 minute 5 year Winter I+20%	36.339	36.133	-0.119	0.000	0.13	0.000	0.3	33.1	FLOOD RISK
ML3-2.001	ML3-09	15 minute 5 year Winter I+20%	35.329	35.139	-0.098	0.000	0.21	0.688	0.3	51.9	FLOOD RISK
ML3-2.002	ML3-10	15 minute 5 year Winter I+20%	34.333	34.153	-0.088	0.000	0.26	0.929	0.4	64.8	FLOOD RISK
ML3-2.003	ML3-11	15 minute 5 year Winter I+20%	33.343	33.164	-0.088	0.000	0.27	0.921	0.4	65.7	FLOOD RISK
ML3-2.004	ML3-12	15 minute 5 year Winter I+20%	32.355	32.173	-0.090	0.000	0.26	0.874	0.4	64.4	FLOOD RISK
ML3-2.005	ML3-13	15 minute 5 year Winter I+20%	31.278	31.191	-0.087	0.000	0.29	0.963	0.3	55.1	FLOOD RISK
ML3-1.007	ML3-14	15 minute 5 year Winter I+20%	30.940	29.407	-0.282	0.000	0.44	0.849	1.6	156.0	OK
ML3-1.008	ML3-15	15 minute 5 year Winter I+20%	31.988	29.078	-0.395	0.000	0.14	0.549	3.7	156.2	OK
ML3-1.009	ML3-16	15 minute 5 year Winter I+20%	26.405	24.834	-0.371	0.000	0.19	0.320	3.0	156.4	OK
ML3-1.010	ML3-17	15 minute 5 year Winter I+20%	25.091	23.492	-0.218	0.000	0.64	1.181	1.2	156.1	OK
ML3-1.011	ML3-18	30 minute 5 year Winter I+20%	24.544	23.404	-0.213	0.000	0.63	3.118	1.2	149.3	OK
ML3-1.012	ML3-FB	30 minute 5 year Winter I+20%	24.500	23.364	-0.161	0.000	0.82	78.280	0.6	102.8	OK
ML3-1.013	ML3-IB	10080 minute 5 year Winter I+20%	24.500	22.973	-0.516	0.000	0.00	658.876	0.0	0.0	OK
ML3-3.000	ML3-19	15 minute 5 year Summer I+20%	24.500	24.290	-0.210	0.000	0.00	0.000	0.0	0.0	OK

10 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML03

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	6	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML3-1.000	ML3-01	15 minute 10 year Winter I+40%	37.097	36.944	-0.068	0.000	0.20	0.000	0.9	30.4	FLOOD RISK
ML3-1.001	ML3-02	15 minute 10 year Winter I+40%	36.316	34.870	-0.157	0.000	0.42	0.279	1.2	36.6	OK
ML3-1.002	ML3-03	15 minute 10 year Winter I+40%	35.449	34.086	-0.147	0.000	0.49	0.569	1.4	47.5	OK
ML3-1.003	ML3-04	15 minute 10 year Winter I+40%	34.449	33.009	-0.219	0.000	0.35	0.340	1.4	60.6	OK
ML3-1.004	ML3-05	15 minute 10 year Winter I+40%	33.456	32.042	-0.190	0.000	0.48	0.730	1.7	89.8	OK
ML3-1.005	ML3-06	15 minute 10 year Winter I+40%	32.366	30.953	-0.128	0.000	0.75	1.126	1.5	116.0	OK
ML3-1.006	ML3-07	15 minute 10 year Winter I+40%	31.507	30.086	-0.207	0.000	0.56	0.850	1.7	145.4	OK
ML3-2.000	ML3-08	15 minute 10 year Winter I+40%	36.339	36.152	-0.100	0.000	0.20	0.000	0.3	48.4	FLOOD RISK
ML3-2.001	ML3-09	15 minute 10 year Winter I+40%	35.329	35.169	-0.068	0.000	0.33	1.533	0.4	80.7	FLOOD RISK
ML3-2.002	ML3-10	15 minute 10 year Winter I+40%	34.333	34.187	-0.054	0.000	0.41	1.979	0.4	100.7	FLOOD RISK
ML3-2.003	ML3-11	15 minute 10 year Winter I+40%	33.343	33.198	-0.054	0.000	0.41	1.966	0.4	99.8	FLOOD RISK
ML3-2.004	ML3-12	15 minute 10 year Winter I+40%	32.355	32.207	-0.056	0.000	0.40	1.906	0.4	97.2	FLOOD RISK
ML3-2.005	ML3-13	15 minute 10 year Winter I+40%	31.278	31.221	-0.057	0.000	0.45	1.896	0.3	83.9	FLOOD RISK
ML3-1.007	ML3-14	15 minute 10 year Winter I+40%	30.940	29.470	-0.219	0.000	0.64	1.349	1.7	228.4	OK
ML3-1.008	ML3-15	15 minute 10 year Winter I+40%	31.988	29.109	-0.364	0.000	0.21	0.769	4.1	228.4	OK
ML3-1.009	ML3-16	15 minute 10 year Winter I+40%	26.405	24.867	-0.338	0.000	0.27	0.405	3.3	228.3	OK
ML3-1.010	ML3-17	30 minute 10 year Winter I+40%	25.091	23.697	-0.013	0.000	0.92	2.589	1.3	222.3	OK
ML3-1.011	ML3-18	30 minute 10 year Winter I+40%	24.544	23.606	-0.011	0.000	0.93	5.726	1.3	221.5	OK
ML3-1.012	ML3-FB	30 minute 10 year Winter I+40%	24.500	23.514	-0.011	0.000	1.00	117.437	0.7	125.1	OK
ML3-1.013	ML3-IB	10080 minute 10 year Winter I+40%	24.500	23.145	-0.344	0.000	0.00	927.185	0.0	0.0	OK
ML3-3.000	ML3-19	15 minute 10 year Summer I+40%	24.500	24.290	-0.210	0.000	0.00	0.000	0.0	0.0	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML03

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	6	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML3-1.000	ML3-01	15 minute 30 year Winter I+40%	37.097	36.954	-0.058	0.000	0.27	0.000	1.0	40.4	FLOOD RISK
ML3-1.001	ML3-02	15 minute 30 year Winter I+40%	36.316	34.897	-0.130	0.000	0.56	0.333	1.3	48.5	OK
ML3-1.002	ML3-03	15 minute 30 year Winter I+40%	35.449	34.113	-0.120	0.000	0.64	0.735	1.5	62.1	OK
ML3-1.003	ML3-04	15 minute 30 year Winter I+40%	34.449	33.033	-0.195	0.000	0.45	0.413	1.5	77.8	OK
ML3-1.004	ML3-05	15 minute 30 year Winter I+40%	33.456	32.072	-0.160	0.000	0.61	0.937	1.8	114.7	OK
ML3-1.005	ML3-06	15 minute 30 year Winter I+40%	32.366	31.001	-0.080	0.000	0.96	1.521	1.6	148.7	OK
ML3-1.006	ML3-07	15 minute 30 year Winter I+40%	31.507	30.128	-0.165	0.000	0.72	1.181	1.8	185.9	OK
ML3-2.000	ML3-08	15 minute 30 year Winter I+40%	36.339	36.168	-0.084	0.000	0.26	0.000	0.4	64.6	FLOOD RISK
ML3-2.001	ML3-09	15 minute 30 year Winter I+40%	35.329	35.190	-0.047	0.000	0.44	2.161	0.4	108.2	FLOOD RISK
ML3-2.002	ML3-10	15 minute 30 year Winter I+40%	34.333	34.208	-0.033	0.000	0.56	2.622	0.4	136.3	FLOOD RISK
ML3-2.003	ML3-11	15 minute 30 year Winter I+40%	33.343	33.219	-0.033	0.000	0.56	2.621	0.4	136.3	FLOOD RISK
ML3-2.004	ML3-12	15 minute 30 year Winter I+40%	32.355	32.228	-0.035	0.000	0.54	2.549	0.4	132.8	FLOOD RISK
ML3-2.005	ML3-13	15 minute 30 year Winter I+40%	31.278	31.243	-0.035	0.000	0.62	2.555	0.3	116.2	FLOOD RISK
ML3-1.007	ML3-14	15 minute 30 year Winter I+40%	30.940	29.535	-0.154	0.000	0.85	2.168	1.8	301.4	OK
ML3-1.008	ML3-15	15 minute 30 year Winter I+40%	31.988	29.133	-0.340	0.000	0.27	0.947	4.4	301.4	OK
ML3-1.009	ML3-16	15 minute 30 year Winter I+40%	26.405	24.898	-0.307	0.000	0.36	0.496	3.5	301.1	OK
ML3-1.010	ML3-17	30 minute 30 year Winter I+40%	25.091	23.818	0.108	0.000	1.21	3.534	1.4	293.2	SURCHARGED
ML3-1.011	ML3-18	30 minute 30 year Winter I+40%	24.544	23.686	0.069	0.000	1.22	6.293	1.3	291.4	SURCHARGED
ML3-1.012	ML3-FB	30 minute 30 year Winter I+40%	24.500	23.571	0.046	0.000	2.01	132.857	1.2	251.9	SURCHARGED
ML3-1.013	ML3-IB	10080 minute 30 year Winter I+40%	24.500	23.287	-0.202	0.000	0.00	1163.340	0.0	0.0	OK
ML3-3.000	ML3-19	15 minute 30 year Summer I+40%	24.500	24.290	-0.210	0.000	0.00	0.000	0.0	0.0	OK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML03

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	6	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML3-1.000	ML3-01	15 minute 100 year Winter I+45%	37.097	36.965	-0.047	0.000	0.36	0.000	1.1	54.6	FLOOD RISK
ML3-1.001	ML3-02	15 minute 100 year Winter I+45%	36.316	34.935	-0.092	0.000	0.75	0.410	1.4	65.1	OK
ML3-1.002	ML3-03	15 minute 100 year Winter I+45%	35.449	34.150	-0.083	0.000	0.84	0.999	1.5	81.3	OK
ML3-1.003	ML3-04	15 minute 100 year Winter I+45%	34.449	33.061	-0.167	0.000	0.58	0.511	1.6	99.9	OK
ML3-1.004	ML3-05	15 minute 100 year Winter I+45%	33.456	32.113	-0.119	0.000	0.79	1.312	1.9	146.8	OK
ML3-1.005	ML3-06	15 minute 100 year Winter I+45%	32.366	31.414	0.333	0.000	1.18	5.966	1.7	183.2	SURCHARGED
ML3-1.006	ML3-07	15 minute 100 year Winter I+45%	31.507	30.179	-0.114	0.000	0.89	1.712	1.8	230.9	OK
ML3-2.000	ML3-08	15 minute 100 year Winter I+45%	36.339	36.191	-0.061	0.000	0.36	0.000	0.4	87.5	FLOOD RISK
ML3-2.001	ML3-09	15 minute 100 year Winter I+45%	35.329	35.213	-0.024	0.000	0.61	2.877	0.4	148.5	FLOOD RISK
ML3-2.002	ML3-10	15 minute 100 year Winter I+45%	34.333	34.234	-0.007	0.000	0.77	3.424	0.5	188.9	FLOOD RISK
ML3-2.003	ML3-11	15 minute 100 year Winter I+45%	33.343	33.245	-0.007	0.000	0.78	3.434	0.5	190.2	FLOOD RISK
ML3-2.004	ML3-12	15 minute 100 year Winter I+45%	32.355	32.254	-0.009	0.000	0.76	3.361	0.5	185.8	FLOOD RISK
ML3-2.005	ML3-13	15 minute 100 year Winter I+45%	31.278	31.270	-0.008	0.000	0.88	3.391	0.4	164.8	FLOOD RISK
ML3-1.007	ML3-14	30 minute 100 year Winter I+45%	30.940	29.711	0.022	0.000	1.09	5.041	1.9	389.6	SURCHARGED
ML3-1.008	ML3-15	30 minute 100 year Winter I+45%	31.988	29.162	-0.311	0.000	0.35	1.195	4.7	388.8	OK
ML3-1.009	ML3-16	30 minute 100 year Winter I+45%	26.405	24.933	-0.272	0.000	0.47	0.614	3.8	389.4	OK
ML3-1.010	ML3-17	30 minute 100 year Winter I+45%	25.091	24.123	0.413	0.000	1.59	5.933	1.8	384.0	SURCHARGED
ML3-1.011	ML3-18	30 minute 100 year Winter I+45%	24.544	23.880	0.263	0.000	1.61	6.846	1.8	383.4	SURCHARGED
ML3-1.012	ML3-FB	30 minute 100 year Winter I+45%	24.500	23.667	0.142	0.000	2.77	160.090	1.6	346.2	SURCHARGED
ML3-1.013	ML3-IB	4320 minute 100 year Winter I+45%	24.500	23.541	0.052	0.000	0.00	1610.505	0.0	0.0	SURCHARGED
ML3-3.000	ML3-19	15 minute 100 year Summer I+45%	24.500	24.290	-0.210	0.000	0.00	0.000	0.0	0.0	OK

Catchment 4 Basin 4 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:10 no flooding check
All pipes pass for 1:10
1:30 no flooding check
All pipes pass for 1:30
1:100 flooding check
No flooding for 1:100

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-ML04

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 610500 313350 TG 10500 13350	PIMP (%)	100
C (1km)	-0.024	Add Flow / Climate Change (%)	20
D1 (1km)	0.305	Minimum Backdrop Height (m)	0.200
D2 (1km)	0.305	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.270	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.313	Min Vel for Auto Design only (m/s)	1.00
F (1km)	2.473	Min Slope for Optimisation (1:X)	200
Maximum Rainfall (mm/hr)	250		

Designed with Level Soffits

Time Area Diagram for SWS-ML04 at outfall ML4-** (pipe ML4- 1.030)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	1.551	4-8	1.007	8-12	1.503	12-16	1.449	16-20	0.553	20-24	0.278	24-28	0.019

Total Area Contributing (ha) = 6.360

Total Pipe Volume (m³) = 2213.490

Time Area Diagram at outfall ML4-91 (pipe ML4- 28.000)

Time (mins)	Area (ha)
0-4	0.000

Total Area Contributing (ha) = 0.000

Total Pipe Volume (m³) = 1.171

Network Design Table for SWS-ML04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML4- 1.000	75.345	0.159	473.9	0.114	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 1.001	75.673	0.518	146.1	0.114	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 1.002	13.633	0.091	149.8	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 2.000	74.950	0.162	462.7	0.124	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 2.001	75.015	0.315	238.1	0.032	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 2.002	12.161	0.281	43.3	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 1.003	48.053	0.240	200.2	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML4- 1.004	80.740	1.126	71.7	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML4- 3.000	13.614	0.260	52.4	0.141	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 3.001	13.008	0.087	149.5	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML4- 1.000	39.65	10.57	54.749	0.114	0.0	0.0	2.4	0.23	111.7	14.7
ML4- 1.001	33.15	13.67	54.590	0.227	0.0	0.0	4.1	0.41	201.1	24.5
ML4- 1.002	32.79	13.88	52.847	0.227	0.0	0.0	4.1	1.07	42.4	24.5
ML4- 2.000	39.90	10.47	54.749	0.124	0.0	0.0	2.7	0.23	113.0	16.0
ML4- 2.001	31.97	14.40	54.587	0.156	0.0	0.0	2.7	0.32	157.5	16.2
ML4- 2.002	31.82	14.50	53.047	0.156	0.0	0.0	2.7	1.99	79.3	16.2
ML4- 1.003	30.89	15.13	52.606	0.383	0.0	0.0	6.4	1.28	141.0	38.5
ML4- 1.004	30.03	15.76	52.366	0.383	0.0	0.0	6.4	2.14	236.6	38.5
ML4- 3.000	65.55	5.13	51.737	0.141	0.0	0.0	5.0	1.81	72.0	30.1
ML4- 3.001	63.80	5.33	51.477	0.141	0.0	0.0	5.0	1.07	42.4	30.1

Network Design Table for SWS-ML04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML4- 1.005	61.474	0.988	62.2	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML4- 4.000	14.523	0.097	149.7	0.057	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 5.000	11.639	0.243	47.9	0.076	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 1.006	84.948	1.429	59.4	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML4- 6.000	14.397	0.157	91.7	0.123	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 6.001	22.180	0.132	168.0	0.000	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 6.002	7.148	0.071	100.7	0.000	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 6.003	20.887	0.161	129.7	0.000	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 6.004	108.470	1.558	69.6	0.159	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 6.005	108.470	2.189	49.6	0.160	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 6.006	12.281	0.082	149.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML4- 7.000	118.055	1.541	76.6	0.081	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 7.001	12.235	0.211	58.0	0.055	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 7.002	44.929	0.740	60.7	0.000	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 7.003	11.534	0.136	84.8	0.000	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 7.004	90.489	1.772	51.1	0.057	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 7.005	14.154	0.094	150.6	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML4- 1.007	36.180	0.986	36.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML4- 8.000	9.638	0.044	219.0	0.154	5.00	0.0	0.600		o	300	Pipe/Conduit	
ML4- 1.008	98.920	2.035	48.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML4- 1.009	88.571	1.979	44.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML4- 1.010	83.927	1.876	44.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML4- 9.000	91.603	2.048	44.7	0.133	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 9.001	107.165	2.395	44.7	0.151	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 9.002	107.165	2.396	44.7	0.146	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 9.003	12.538	0.084	149.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML4- 1.005	29.46	16.20	51.240	0.525	0.0	0.0	8.4	2.30	254.1	50.2
ML4- 4.000	64.66	5.23	50.499	0.057	0.0	0.0	2.0	1.07	42.4	12.0
ML4- 5.000	65.75	5.10	50.645	0.076	0.0	0.0	2.7	1.89	75.3	16.2
ML4- 1.006	28.72	16.80	50.252	0.657	0.0	0.0	10.2	2.35	260.0	61.3
ML4- 6.000	62.67	5.47	54.060	0.123	0.0	0.0	4.2	0.51	253.9	25.1
ML4- 6.001	55.91	6.44	53.903	0.123	0.0	0.0	4.2	0.38	187.6	25.1
ML4- 6.002	54.49	6.69	53.771	0.123	0.0	0.0	4.2	0.49	242.3	25.1
ML4- 6.003	50.34	7.49	53.700	0.123	0.0	0.0	4.2	0.43	213.4	25.1
ML4- 6.004	39.65	10.57	53.539	0.282	0.0	0.0	6.1	0.59	291.4	36.3
ML4- 6.005	34.04	13.16	51.981	0.442	0.0	0.0	8.2	0.70	345.4	48.9
ML4- 6.006	33.84	13.27	48.755	0.442	0.0	0.0	8.2	1.83	395.7	48.9
ML4- 7.000	46.09	8.51	54.272	0.081	0.0	0.0	2.0	0.56	277.8	12.1
ML4- 7.001	44.94	8.82	52.731	0.136	0.0	0.0	3.3	0.64	319.3	19.8
ML4- 7.002	41.16	10.01	52.520	0.136	0.0	0.0	3.3	0.63	312.0	19.8
ML4- 7.003	40.16	10.37	51.780	0.136	0.0	0.0	3.3	0.53	264.0	19.8
ML4- 7.004	35.15	12.57	51.644	0.192	0.0	0.0	3.7	0.69	340.2	22.0
ML4- 7.005	34.79	12.75	48.993	0.192	0.0	0.0	3.7	1.28	90.4	22.0
ML4- 1.007	28.53	16.97	48.673	1.292	0.0	0.0	20.0	3.71	802.3	119.8
ML4- 8.000	65.32	5.15	47.956	0.154	0.0	0.0	5.4	1.06	74.8	32.7
ML4- 1.008	27.94	17.48	47.687	1.446	0.0	0.0	21.9	3.22	696.7	131.3
ML4- 1.009	27.47	17.92	45.652	1.446	0.0	0.0	21.9	3.35	726.2	131.3
ML4- 1.010	27.03	18.34	43.673	1.446	0.0	0.0	21.9	3.36	726.4	131.3
ML4- 9.000	52.37	7.08	49.770	0.133	0.0	0.0	3.8	0.73	363.5	22.7
ML4- 9.001	42.65	9.51	47.722	0.284	0.0	0.0	6.6	0.73	363.4	39.4
ML4- 9.002	36.41	11.94	45.327	0.430	0.0	0.0	8.5	0.73	363.5	50.9
ML4- 9.003	36.14	12.07	41.956	0.430	0.0	0.0	8.5	1.66	264.3	50.9

Network Design Table for SWS-ML04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML4- 10.000	97.967	2.140	45.8	0.121	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 10.001	104.144	2.354	44.2	0.159	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 10.002	104.122	2.313	45.0	0.166	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 10.003	11.646	0.078	149.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML4- 1.011	92.355	2.066	44.7	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML4- 1.012	85.142	1.902	44.8	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML4- 1.013	92.504	2.479	37.3	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML4- 11.000	89.216	2.109	42.3	0.141	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 11.001	95.565	2.020	47.3	0.147	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 11.002	87.890	2.044	43.0	0.133	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 12.000	75.382	0.879	85.8	0.091	5.00	0.0		0.080	1 _/	450	1:1 Ditch	
ML4- 12.001	11.639	0.300	38.8	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 11.003	11.956	0.274	43.6	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
ML4- 1.014	12.135	0.121	100.3	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
ML4- 13.000	90.290	2.019	44.7	0.123	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 13.001	91.639	2.049	44.7	0.123	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 13.002	91.639	2.007	45.7	0.126	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 1.015	58.358	0.724	80.6	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
ML4- 14.000	56.551	0.851	66.5	0.080	5.00	0.0		0.015	5 \/	150	1:5 V	
ML4- 1.016	98.653	1.043	94.6	0.000	0.00	0.0	1.500		o	750	Pipe/Conduit	
ML4- 1.017	70.776	0.851	83.2	0.000	0.00	0.0	1.500		o	750	Pipe/Conduit	
ML4- 15.000	2.338	0.239	9.8	0.155	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 1.018	80.410	0.788	102.0	0.000	0.00	0.0	1.500		o	750	Pipe/Conduit	
ML4- 16.000	7.120	0.378	18.8	0.078	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML4- 10.000	51.51	7.25	49.845	0.121	0.0	0.0	3.4	0.73	359.3	20.3
ML4- 10.001	42.38	9.60	47.705	0.280	0.0	0.0	6.4	0.74	365.5	38.6
ML4- 10.002	36.35	11.97	45.351	0.446	0.0	0.0	8.8	0.73	362.3	52.7
ML4- 10.003	36.11	12.09	41.951	0.446	0.0	0.0	8.8	1.66	264.3	52.7
ML4- 1.011	26.61	18.76	41.722	2.322	0.0	0.0	33.5	3.65	1031.7	200.8
ML4- 1.012	26.23	19.15	39.656	2.322	0.0	0.0	33.5	3.65	1031.0	200.8
ML4- 1.013	25.87	19.53	37.754	2.322	0.0	0.0	33.5	4.00	1129.6	200.8
ML4- 11.000	52.94	6.97	43.023	0.141	0.0	0.0	4.0	0.76	373.8	24.3
ML4- 11.001	43.65	9.20	40.914	0.288	0.0	0.0	6.8	0.71	353.5	40.9
ML4- 11.002	38.18	11.16	38.894	0.421	0.0	0.0	8.7	0.75	370.8	52.3
ML4- 12.000	50.57	7.44	40.041	0.091	0.0	0.0	2.5	0.51	208.2	15.0
ML4- 12.001	50.14	7.54	35.700	0.091	0.0	0.0	2.5	2.11	83.8	15.0
ML4- 11.003	38.07	11.20	35.400	0.512	0.0	0.0	10.6	4.24	1874.7	63.4
ML4- 1.014	25.80	19.60	35.126	2.834	0.0	0.0	39.6	2.79	1234.6	237.7
ML4- 13.000	52.53	7.05	42.908	0.123	0.0	0.0	3.5	0.73	363.5	21.1
ML4- 13.001	43.89	9.13	40.889	0.246	0.0	0.0	5.9	0.73	363.5	35.1
ML4- 13.002	38.00	11.23	38.840	0.372	0.0	0.0	7.7	0.73	359.8	45.9
ML4- 1.015	25.52	19.92	35.005	3.206	0.0	0.0	44.3	3.12	1377.8	265.9
ML4- 14.000	61.21	5.66	36.932	0.080	0.0	0.0	2.7	1.44	161.5	16.0
ML4- 1.016	24.97	20.56	34.281	3.286	0.0	0.0	44.4	2.57	1136.3	266.6
ML4- 1.017	24.61	20.99	33.238	3.286	0.0	0.0	44.4	2.74	1211.9	266.6
ML4- 15.000	66.60	5.01	33.151	0.155	0.0	0.0	5.6	4.21	167.3	33.6
ML4- 1.018	24.18	21.53	32.387	3.441	0.0	0.0	45.1	2.48	1093.9	270.4
ML4- 16.000	66.33	5.04	32.502	0.078	0.0	0.0	2.8	3.03	120.4	16.8

Network Design Table for SWS-ML04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML4- 17.000	3.198	0.263	12.2	0.062	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 1.019	55.727	0.450	123.8	0.000	0.00	0.0	1.500		o	825	Pipe/Conduit	
ML4- 1.020	55.727	0.461	120.9	0.000	0.00	0.0	1.500		o	825	Pipe/Conduit	
ML4- 18.000	3.276	0.171	19.2	0.129	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 1.021	29.787	0.303	98.3	0.000	0.00	0.0	1.500		o	825	Pipe/Conduit	
ML4- 1.022	99.763	0.989	100.9	0.000	0.00	0.0	1.500		o	825	Pipe/Conduit	
ML4- 1.023	81.112	1.647	49.2	0.000	0.00	0.0	1.500		o	825	Pipe/Conduit	
ML4- 19.000	19.139	0.652	29.4	0.024	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 20.000	3.142	0.269	11.7	0.046	5.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 19.001	53.966	0.410	131.6	0.000	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML4- 19.002	61.160	1.411	43.3	0.000	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML4- 21.000	53.496	0.467	114.6	0.068	5.00	0.0		0.005	2V	-3	Pipe/Conduit	
ML4- 21.001	61.534	0.673	91.4	0.082	0.00	0.0		0.005	2V	-3	Pipe/Conduit	
ML4- 22.000	110.422	0.969	114.0	0.130	5.00	0.0		0.015	5 \/	150	1:5 V	
ML4- 22.001	13.546	1.521	8.9	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 23.000	98.361	0.935	105.2	0.078	5.00	0.0		0.005	2V	-3	Pipe/Conduit	
ML4- 23.001	70.330	0.790	89.0	0.029	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 23.002	80.973	0.927	87.3	0.046	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 23.003	56.245	0.348	161.6	0.025	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 23.004	56.245	0.598	94.1	0.029	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 23.005	28.281	0.329	86.0	0.046	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 23.006	99.685	1.001	99.6	0.147	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 23.007	81.176	0.880	92.2	0.135	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 1.024	62.328	1.269	49.1	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML4- 1.025	72.357	4.205	17.2	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML4- 1.026	11.702	0.125	93.6	0.080	0.00	0.0	0.600		o	825	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML4- 17.000	66.56	5.01	32.387	0.062	0.0	0.0	2.2	3.77	150.0	13.5
ML4- 1.019	23.88	21.92	31.524	3.582	0.0	0.0	46.3	2.39	1276.0	278.0
ML4- 1.020	23.59	22.30	31.074	3.582	0.0	0.0	46.3	2.42	1291.5	278.0
ML4- 18.000	66.52	5.02	31.384	0.129	0.0	0.0	4.7	3.00	119.4	28.0
ML4- 1.021	23.46	22.49	30.613	3.711	0.0	0.0	47.2	2.68	1432.5	282.9
ML4- 1.022	23.01	23.11	30.310	3.711	0.0	0.0	47.2	2.65	1414.1	282.9
ML4- 1.023	22.77	23.47	29.321	3.711	0.0	0.0	47.2	3.79	2025.0	282.9
ML4- 19.000	65.49	5.13	30.672	0.024	0.0	0.0	0.9	2.42	96.4	5.1
ML4- 20.000	66.56	5.01	30.289	0.046	0.0	0.0	1.6	3.85	153.1	9.9
ML4- 19.001	58.54	6.03	30.020	0.070	0.0	0.0	2.2	1.00	39.8	13.3
ML4- 19.002	54.90	6.61	29.610	0.070	0.0	0.0	2.2	1.75	69.4	13.3
ML4- 21.000	64.94	5.19	31.394	0.068	0.0	0.0	2.4	4.59	2271.5	14.4
ML4- 21.001	63.26	5.39	30.927	0.151	0.0	0.0	5.2	5.14	2542.5	31.0
ML4- 22.000	54.53	6.68	31.964	0.130	0.0	0.0	3.8	1.10	123.3	23.1
ML4- 22.001	54.24	6.73	29.720	0.130	0.0	0.0	3.8	4.41	175.4	23.1
ML4- 23.000	63.69	5.34	36.062	0.078	0.0	0.0	2.7	4.79	2370.3	16.1
ML4- 23.001	49.88	7.59	35.127	0.107	0.0	0.0	2.9	0.52	257.7	17.3
ML4- 23.002	40.73	10.16	34.337	0.153	0.0	0.0	3.4	0.53	260.1	20.2
ML4- 23.003	35.10	12.59	33.410	0.178	0.0	0.0	3.4	0.39	191.2	20.3
ML4- 23.004	31.91	14.44	33.062	0.207	0.0	0.0	3.6	0.51	250.7	21.5
ML4- 23.005	30.61	15.33	32.464	0.253	0.0	0.0	4.2	0.53	262.2	25.1
ML4- 23.006	26.66	18.71	32.135	0.400	0.0	0.0	5.8	0.49	243.6	34.7
ML4- 23.007	24.31	21.35	31.134	0.535	0.0	0.0	7.0	0.51	253.1	42.3
ML4- 1.024	22.60	23.72	27.674	4.597	0.0	0.0	56.3	4.24	2267.8	337.7
ML4- 1.025	22.49	23.88	26.405	4.597	0.0	0.0	56.3	7.18	3836.2	337.7
ML4- 1.026	22.45	23.95	22.125	4.677	0.0	0.0	56.9	3.07	1640.7	341.3

Network Design Table for SWS-ML04

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML4- 24.000	81.706	0.178	459.0	0.085	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 24.001	63.373	0.410	154.6	0.076	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 25.000	62.486	0.500	125.0	0.000	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML4- 26.000	80.944	0.173	467.9	0.107	5.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 26.001	81.106	0.393	206.4	0.113	0.00	0.0		0.050	2V	-3	Pipe/Conduit	
ML4- 27.000	68.830	0.550	125.1	0.000	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML4- 26.002	19.893	0.391	50.9	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 24.002	23.604	5.825	4.1	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML4- 1.027	57.620	0.397	145.1	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML4- 1.028	12.434	0.103	120.7	0.034	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML4- 1.029	38.590	0.271	142.4	0.168	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML4- 1.030	13.063	0.200	65.3	1.098	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML4- 28.000	7.577	0.189	40.1	0.000	5.00	0.0		0.015	g	-4	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML4- 24.000	38.70	10.94	32.091	0.085	0.0	0.0	1.8	0.23	113.5	10.7
ML4- 24.001	33.24	13.61	31.913	0.162	0.0	0.0	2.9	0.40	195.5	17.5
ML4- 25.000	58.65	6.01	30.677	0.000	0.0	0.0	0.0	1.03	40.8	0.0
ML4- 26.000	38.70	10.94	32.541	0.107	0.0	0.0	2.2	0.23	112.4	13.5
ML4- 26.001	31.23	14.90	32.368	0.221	0.0	0.0	3.7	0.34	169.2	22.4
ML4- 27.000	57.96	6.12	31.118	0.000	0.0	0.0	0.0	1.03	40.8	0.0
ML4- 26.002	30.97	15.08	30.568	0.221	0.0	0.0	3.7	1.84	73.1	22.4
ML4- 24.002	30.88	15.14	28.500	0.382	0.0	0.0	6.4	6.55	260.3	38.4
ML4- 1.027	22.21	24.32	22.000	5.059	0.0	0.0	60.9	2.60	1653.3	365.2
ML4- 1.028	22.17	24.39	21.603	5.093	0.0	0.0	61.2	2.85	1813.7	366.9
ML4- 1.029	22.01	24.63	21.500	5.261	0.0	0.0	62.7	2.62	1669.2	376.4
ML4- 1.030	21.98	24.69	22.000	6.360	0.0	0.0	75.7	3.88	2468.7	454.3
ML4- 28.000	66.27	5.05	22.790	0.000	0.0	0.0	0.0	2.78	430.0	0.0

Conduit Sections for SWS-ML04

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m²)
-3	2V	4001	200			0.487	0.495
-4	g	1000	210			0.544	0.155

Manhole Schedules for SWS-ML04

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)
ML4-1	55.041	0.292	Open Manhole	10	ML4- 1.000	54.749	-3				
ML4-2	54.790	0.200	Open Manhole	10	ML4- 1.001	54.590	-3	ML4- 1.000	54.590	-3	
ML4-3	54.272	1.425	Open Manhole	1500	ML4- 1.002	52.847	225	ML4- 1.001	54.072	-3	1200
ML4-4	54.949	0.200	Open Manhole	10	ML4- 2.000	54.749	-3				
ML4-5	54.787	0.200	Open Manhole	10	ML4- 2.001	54.587	-3	ML4- 2.000	54.587	-3	
ML4-6	54.472	1.425	Open Manhole	1500	ML4- 2.002	53.047	225	ML4- 2.001	54.272	-3	1200
ML4-7	54.770	2.164	Open Manhole	1500	ML4- 1.003	52.606	375	ML4- 1.002	52.756	225	
								ML4- 2.002	52.766	225	10
ML4-8	54.298	1.932	Open Manhole	1500	ML4- 1.004	52.366	375	ML4- 1.003	52.366	375	
ML4-9	53.187	1.450	Open Manhole	600	ML4- 3.000	51.737	225				
ML4-10	52.912	1.435	Open Manhole	1200	ML4- 3.001	51.477	225	ML4- 3.000	51.477	225	
ML4-11	53.229	1.989	Open Manhole	1500	ML4- 1.005	51.240	375	ML4- 1.004	51.240	375	
								ML4- 3.001	51.390	225	
ML4-12	51.948	1.449	Open Manhole	600	ML4- 4.000	50.499	225				
ML4-13	52.070	1.425	Open Manhole	600	ML4- 5.000	50.645	225				
ML4-14	52.178	1.926	Open Manhole	1500	ML4- 1.006	50.252	375	ML4- 1.005	50.252	375	
								ML4- 4.000	50.402	225	
								ML4- 5.000	50.402	225	
ML4-15	54.260	0.200	Open Manhole	10	ML4- 6.000	54.060	-3				
ML4-16	54.103	0.200	Open Manhole	10	ML4- 6.001	53.903	-3	ML4- 6.000	53.903	-3	
ML4-17	53.971	0.200	Open Manhole	10	ML4- 6.002	53.771	-3	ML4- 6.001	53.771	-3	
ML4-18	53.900	0.200	Open Manhole	10	ML4- 6.003	53.700	-3	ML4- 6.002	53.700	-3	
ML4-19	53.739	0.200	Open Manhole	10	ML4- 6.004	53.539	-3	ML4- 6.003	53.539	-3	
ML4-20	52.181	0.200	Open Manhole	10	ML4- 6.005	51.981	-3	ML4- 6.004	51.981	-3	
ML4-21	49.992	1.237	Open Manhole	1500	ML4- 6.006	48.755	525	ML4- 6.005	49.792	-3	712
ML4-22	54.472	0.200	Open Manhole	10	ML4- 7.000	54.272	-3				
ML4-23	52.931	0.200	Open Manhole	10	ML4- 7.001	52.731	-3	ML4- 7.000	52.731	-3	
ML4-24	52.720	0.200	Open Manhole	10	ML4- 7.002	52.520	-3	ML4- 7.001	52.520	-3	
ML4-25	51.980	0.200	Open Manhole	10	ML4- 7.003	51.780	-3	ML4- 7.002	51.780	-3	
ML4-26	51.844	0.200	Open Manhole	10	ML4- 7.004	51.644	-3	ML4- 7.003	51.644	-3	
ML4-27	50.072	1.079	Open Manhole	1500	ML4- 7.005	48.993	300	ML4- 7.004	49.872	-3	779
ML4-29	50.398	1.725	Open Manhole	1500	ML4- 1.007	48.673	525	ML4- 1.006	48.823	375	
								ML4- 6.006	48.673	525	
								ML4- 7.005	48.899	300	1
ML4-30	49.481	1.525	Open Manhole	600	ML4- 8.000	47.956	300				
ML4-31	49.589	1.902	Open Manhole	1500	ML4- 1.008	47.687	525	ML4- 1.007	47.687	525	
								ML4- 8.000	47.912	300	
ML4-32	47.378	1.726	Open Manhole	1500	ML4- 1.009	45.652	525	ML4- 1.008	45.652	525	
ML4-33	45.399	1.726	Open Manhole	1500	ML4- 1.010	43.673	525	ML4- 1.009	43.673	525	
ML4-34	49.970	0.200	Open Manhole	10	ML4- 9.000	49.770	-3				
ML4-35	47.922	0.200	Open Manhole	10	ML4- 9.001	47.722	-3	ML4- 9.000	47.722	-3	
ML4-36	45.527	0.200	Open Manhole	10	ML4- 9.002	45.327	-3	ML4- 9.001	45.327	-3	
ML4-37	43.131	1.175	Open Manhole	1500	ML4- 9.003	41.956	450	ML4- 9.002	42.931	-3	725
ML4-38	50.045	0.200	Open Manhole	10	ML4- 10.000	49.845	-3				
ML4-39	47.905	0.200	Open Manhole	10	ML4- 10.001	47.705	-3	ML4- 10.000	47.705	-3	
ML4-40	45.551	0.200	Open Manhole	10	ML4- 10.002	45.351	-3	ML4- 10.001	45.351	-3	
ML4-41	43.238	1.287	Open Manhole	1500	ML4- 10.003	41.951	450	ML4- 10.002	43.038	-3	837
ML4-42	43.523	1.801	Open Manhole	1500	ML4- 1.011	41.722	600	ML4- 1.010	41.797	525	
								ML4- 9.003	41.872	450	
								ML4- 10.003	41.873	450	1
ML4-43	41.457	1.801	Open Manhole	1500	ML4- 1.012	39.656	600	ML4- 1.011	39.656	600	
ML4-44	39.554	1.800	Open Manhole	1800	ML4- 1.013	37.754	600	ML4- 1.012	37.754	600	
ML4-45	43.223	0.200	Open Manhole	10	ML4- 11.000	43.023	-3				
ML4-46	41.114	0.200	Open Manhole	10	ML4- 11.001	40.914	-3	ML4- 11.000	40.914	-3	
ML4-47	39.094	0.200	Open Manhole	10	ML4- 11.002	38.894	-3	ML4- 11.001	38.894	-3	
ML4-48	40.491	0.450	Open Manhole	10	ML4- 12.000	40.041	450				
ML4-49	39.710	4.010	Open Manhole	1500	ML4- 12.001	35.700	225	ML4- 12.000	39.162	450	3687
ML4-50	37.139	1.739	Open Manhole	1800	ML4- 11.003	35.400	750	ML4- 11.002	36.850	-3	900
								ML4- 12.001	35.400	225	

Manhole Schedules for SWS-ML04

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)
ML4-51	37.517	2.391	Open Manhole	1800	ML4- 1.014	35.126	750	ML4- 1.013	35.275	600	
								ML4- 11.003	35.126	750	
ML4-52	43.108	0.200	Open Manhole	10	ML4- 13.000	42.908	-3				
ML4-53	41.089	0.200	Open Manhole	10	ML4- 13.001	40.889	-3	ML4- 13.000	40.889	-3	
ML4-54	39.040	0.200	Open Manhole	10	ML4- 13.002	38.840	-3	ML4- 13.001	38.840	-3	
ML4-55	37.121	2.116	Open Manhole	1800	ML4- 1.015	35.005	750	ML4- 1.014	35.005	750	
								ML4- 13.002	36.833	-3	1278
ML4-56	37.167	0.235	Open Manhole	10	ML4- 14.000	36.932	150				
ML4-57	36.318	2.037	Open Manhole	1800	ML4- 1.016	34.281	750	ML4- 1.015	34.281	750	
								ML4- 14.000	36.081	150	1200
ML4-58	35.369	2.131	Open Manhole	1800	ML4- 1.017	33.238	750	ML4- 1.016	33.238	750	
ML4-59	34.734	1.583	Open Manhole	600	ML4- 15.000	33.151	225				
ML4-60	34.583	2.196	Open Manhole	1800	ML4- 1.018	32.387	750	ML4- 1.017	32.387	750	
								ML4- 15.000	32.912	225	
ML4-61	33.927	1.425	Open Manhole	600	ML4- 16.000	32.502	225				
ML4-62	33.838	1.451	Open Manhole	600	ML4- 17.000	32.387	225				
ML4-63	33.779	2.255	Open Manhole	1800	ML4- 1.019	31.524	825	ML4- 1.018	31.599	750	
								ML4- 16.000	32.124	225	
								ML4- 17.000	32.124	225	
ML4-64	33.270	2.196	Open Manhole	2100	ML4- 1.020	31.074	825	ML4- 1.019	31.074	825	
ML4-65	32.809	1.425	Open Manhole	600	ML4- 18.000	31.384	225				
ML4-66	32.630	2.017	Open Manhole	1800	ML4- 1.021	30.613	825	ML4- 1.020	30.613	825	
								ML4- 18.000	31.213	225	
ML4-67	32.327	2.017	Open Manhole	1800	ML4- 1.022	30.310	825	ML4- 1.021	30.310	825	
ML4-68	31.390	2.069	Open Manhole	1800	ML4- 1.023	29.321	825	ML4- 1.022	29.321	825	
ML4-69	32.138	1.466	Open Manhole	600	ML4- 19.000	30.672	225				
ML4-70	31.751	1.462	Open Manhole	600	ML4- 20.000	30.289	225				
ML4-71	31.537	1.517	Open Manhole	1050	ML4- 19.001	30.020	225	ML4- 19.000	30.020	225	
								ML4- 20.000	30.020	225	
ML4-72	31.159	1.549	Open Manhole	1050	ML4- 19.002	29.610	225	ML4- 19.001	29.610	225	
ML4-73	31.685	0.291	Open Manhole	10	ML4- 21.000	31.394	-3				
ML4-74	31.199	0.272	Open Manhole	10	ML4- 21.001	30.927	-3	ML4- 21.000	30.927	-3	
ML4-75	32.211	0.247	Open Manhole	10	ML4- 22.000	31.964	150				
ML4-76	31.145	1.425	Open Manhole	1050	ML4- 22.001	29.720	225	ML4- 22.000	30.995	150	1200
ML4-77	36.351	0.289	Open Manhole	10	ML4- 23.000	36.062	-3				
ML4-78	35.509	0.382	Junction		ML4- 23.001	35.127	-3	ML4- 23.000	35.127	-3	
ML4-79	34.783	0.446	Open Manhole	10	ML4- 23.002	34.337	-3	ML4- 23.001	34.337	-3	
ML4-80	33.610	0.200	Open Manhole	10	ML4- 23.003	33.410	-3	ML4- 23.002	33.410	-3	
ML4-81	33.432	0.370	Open Manhole	10	ML4- 23.004	33.062	-3	ML4- 23.003	33.062	-3	
ML4-82	32.681	0.217	Open Manhole	10	ML4- 23.005	32.464	-3	ML4- 23.004	32.464	-3	
ML4-83	32.326	0.191	Junction		ML4- 23.006	32.135	-3	ML4- 23.005	32.135	-3	
ML4-84	31.382	0.248	Open Manhole	10	ML4- 23.007	31.134	-3	ML4- 23.006	31.134	-3	
ML4-85	30.545	2.871	Open Manhole	1800	ML4- 1.024	27.674	825	ML4- 1.023	27.674	825	
								ML4- 19.002	28.199	225	
								ML4- 21.001	30.254	-3	1955
								ML4- 22.001	28.199	225	
								ML4- 23.007	30.254	-3	1955
ML4-86	28.313	1.908	Open Manhole	1800	ML4- 1.025	26.405	825	ML4- 1.024	26.405	825	
ML4-87	24.304	2.179	Open Manhole	1800	ML4- 1.026	22.125	825	ML4- 1.025	22.200	825	75
ML4-88	32.382	0.291	Open Manhole	10	ML4- 24.000	32.091	-3				
ML4-89	32.198	0.285	Open Manhole	10	ML4- 24.001	31.913	-3	ML4- 24.000	31.913	-3	
ML4-90	32.194	1.517	Open Manhole	1050	ML4- 25.000	30.677	225				
ML4-91	32.829	0.288	Open Manhole	10	ML4- 26.000	32.541	-3				
ML4-92	32.660	0.292	Open Manhole	10	ML4- 26.001	32.368	-3	ML4- 26.000	32.368	-3	
ML4-93	32.624	1.506	Open Manhole	1050	ML4- 27.000	31.118	225				
ML4-94	32.236	1.668	Open Manhole	1050	ML4- 26.002	30.568	225	ML4- 26.001	31.975	-3	1382
								ML4- 27.000	30.568	225	
ML4-95	31.795	3.295	Open Manhole	1050	ML4- 24.002	28.500	225	ML4- 24.001	31.503	-3	2978
								ML4- 25.000	30.177	225	1677

Manhole Schedules for SWS-ML04

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)
								ML4- 26.002	30.177	225	1677
ML4-96	23.816	1.816	Open Manhole	1800	ML4- 1.027	22.000	900	ML4- 1.026	22.000	825	
								ML4- 24.002	22.675	225	
ML4-97	23.120	1.517	Open Manhole	1800	ML4- 1.028	21.603	900	ML4- 1.027	21.603	900	
ML4-FB	23.000	1.500	Open Manhole	1800	ML4- 1.029	21.500	900	ML4- 1.028	21.500	900	
ML4-IB	23.000	1.771	Open Manhole	1800	ML4- 1.030	22.000	900	ML4- 1.029	21.229	900	
ML4-**	22.766	0.966	Open Manhole	1800		OUTFALL		ML4- 1.030	21.800	900	
ML4-98	23.000	0.210	Junction		ML4- 28.000	22.790	-4				
ML4-91	22.836	0.235	Open Manhole	0		OUTFALL		ML4- 28.000	22.601	-4	

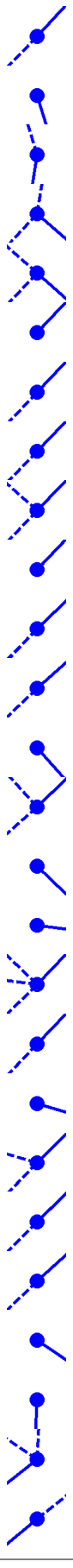
MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML4-1	15301.971	524786.135	15301.971	524786.135	Required	
ML4-2	15357.162	524837.426	15357.162	524837.426	Required	
ML4-3	15411.786	524889.795	15411.786	524889.795	Required	
ML4-4	15286.058	524803.736	15286.058	524803.736	Required	
ML4-5	15340.890	524854.833	15340.890	524854.833	Required	
ML4-6	15394.665	524907.135	15394.665	524907.135	Required	
ML4-7	15405.682	524901.985	15405.682	524901.985	Required	
ML4-8	15439.106	524936.509	15439.106	524936.509	Required	
ML4-9	15474.992	524995.612	15474.992	524995.612	Required	
ML4-10	15485.638	525004.097	15485.638	525004.097	Required	
ML4-11	15494.853	524994.915	15494.853	524994.915	Required	
ML4-12	15526.606	525049.360	15526.606	525049.360	Required	
ML4-13	15525.699	525041.068	15525.699	525041.068	Required	
ML4-14	15537.225	525039.452	15537.225	525039.452	Required	
ML4-15	15412.530	524890.387	15412.530	524890.387	Required	
ML4-16	15423.564	524899.635	15423.564	524899.635	Required	
ML4-17	15444.358	524907.353	15444.358	524907.353	Required	
ML4-18	15449.298	524912.519	15449.298	524912.519	Required	
ML4-19	15452.459	524933.165	15452.459	524933.165	Required	

Manhole Schedules for SWS-ML04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML4-20	15527.203	525011.772	15527.203	525011.772	Required	
ML4-21	15601.947	525090.380	15601.947	525090.380	Required	
ML4-22	15394.586	524908.115	15394.586	524908.115	Required	
ML4-23	15472.754	524996.584	15472.754	524996.584	Required	
ML4-24	15476.225	525008.317	15476.225	525008.317	Required	
ML4-25	15507.208	525040.854	15507.208	525040.854	Required	
ML4-26	15518.165	525044.455	15518.165	525044.455	Required	
ML4-27	15583.160	525107.414	15583.160	525107.414	Required	
ML4-29	15595.776	525100.998	15595.776	525100.998	Required	
ML4-30	15613.755	525133.832	15613.755	525133.832	Required	
ML4-31	15620.737	525127.188	15620.737	525127.188	Required	
ML4-32	15688.892	525198.883	15688.892	525198.883	Required	
ML4-33	15749.897	525263.095	15749.897	525263.095	Required	
ML4-34	15602.669	525091.025	15602.669	525091.025	Required	
ML4-35	15665.799	525157.400	15665.799	525157.400	Required	
ML4-36	15739.620	525235.084	15739.620	525235.084	Required	
ML4-37	15813.441	525312.768	15813.441	525312.768	Required	
ML4-38	15584.082	525108.256	15584.082	525108.256	Required	
ML4-39	15653.449	525177.435	15653.449	525177.435	Required	
ML4-40	15725.132	525252.982	15725.132	525252.982	Required	
ML4-41	15796.955	525328.367	15796.955	525328.367	Required	
ML4-42	15807.720	525323.924	15807.720	525323.924	Required	
ML4-43	15871.412	525390.804	15871.412	525390.804	Required	
ML4-44	15930.038	525452.547	15930.038	525452.547	Required	
ML4-45	15797.702	525329.105	15797.702	525329.105	Required	
ML4-46	15858.475	525394.420	15858.475	525394.420	Required	

Manhole Schedules for SWS-ML04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML4-47	15925.050	525462.981	15925.050	525462.981	Required	
ML4-48	15964.357	525610.984	15964.357	525610.984	Required	
ML4-49	15986.596	525538.957	15986.596	525538.957	Required	
ML4-50	15984.772	525527.462	15984.772	525527.462	Required	
ML4-51	15993.772	525519.591	15993.772	525519.591	Required	
ML4-52	15814.234	525313.423	15814.234	525313.423	Required	
ML4-53	15876.412	525378.892	15876.412	525378.892	Required	
ML4-54	15939.639	525445.225	15939.639	525445.225	Required	
ML4-55	16002.866	525511.557	16002.866	525511.557	Required	
ML4-56	16004.764	525512.241	16004.764	525512.241	Required	
ML4-57	16043.564	525553.382	16043.564	525553.382	Required	
ML4-58	16115.088	525621.328	16115.088	525621.328	Required	
ML4-59	16166.466	525670.065	16166.466	525670.065	Required	
ML4-60	16168.017	525668.315	16168.017	525668.315	Required	
ML4-61	16220.274	525729.553	16220.274	525729.553	Required	
ML4-62	16222.245	525725.043	16222.245	525725.043	Required	
ML4-63	16225.416	525724.628	16225.416	525724.628	Required	
ML4-64	16263.969	525764.867	16263.969	525764.867	Required	
ML4-65	16299.377	525806.023	16299.377	525806.023	Required	
ML4-66	16302.521	525805.106	16302.521	525805.106	Required	
ML4-67	16323.569	525826.183	16323.569	525826.183	Required	
ML4-68	16394.841	525895.991	16394.841	525895.991	Required	
ML4-69	16528.337	526033.825	16528.337	526033.825	Required	
ML4-70	16544.370	526026.263	16544.370	526026.263	Required	
ML4-71	16544.205	526023.125	16544.205	526023.125	Required	
ML4-72	16501.837	525989.699	16501.837	525989.699	Required	



Manhole Schedules for SWS-ML04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML4-73	16544.917	526022.094	16544.917	526022.094	Required	
ML4-74	16502.797	525989.113	16502.797	525989.113	Required	
ML4-75	16528.846	526032.259	16528.846	526032.259	Required	
ML4-76	16445.127	525960.258	16445.127	525960.258	Required	
ML4-77	16044.332	525553.628	16044.332	525553.628	Required	
ML4-78	16116.459	525620.506			No Entry	
ML4-79	16169.018	525667.237	16169.018	525667.237	Required	
ML4-80	16227.008	525723.751	16227.008	525723.751	Required	
ML4-81	16265.539	525764.724	16265.539	525764.724	Required	
ML4-82	16304.070	525805.698	16304.070	525805.698	Required	
ML4-83	16323.962	525825.801			No Entry	
ML4-84	16394.841	525895.897	16394.841	525895.897	Required	
ML4-85	16454.725	525950.699	16454.725	525950.699	Required	
ML4-86	16508.977	525981.383	16508.977	525981.383	Required	
ML4-87	16572.383	526016.243	16572.383	526016.243	Required	
ML4-88	16699.455	526104.372	16699.455	526104.372	Required	
ML4-89	16624.984	526070.756	16624.984	526070.756	Required	
ML4-90	16623.998	526070.698	16623.998	526070.698	Required	
ML4-91	16692.812	526122.270	16692.812	526122.270	Required	
ML4-92	16619.517	526087.921	16619.517	526087.921	Required	
ML4-93	16608.517	526082.351	16608.517	526082.351	Required	
ML4-94	16550.564	526045.217	16550.564	526045.217	Required	
ML4-95	16569.699	526039.777	16569.699	526039.777	Required	
ML4-96	16583.292	526020.479	16583.292	526020.479	Required	
ML4-97	16640.818	526017.187	16640.818	526017.187	Required	
ML4-FB	16653.076	526015.101	16653.076	526015.101	Required	

Manhole Schedules for SWS-ML04

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML4-IB	16686.668	525996.107	16686.668	525996.107	Required	
ML4-**	16693.645	525985.064			No Entry	
ML4-98	16650.923	525986.498			No Entry	
ML4-91	16648.503	525979.318			No Entry	

PIPELINE SCHEDULES for SWS-ML04

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)
ML4- 1.000	2V	-3	ML4-1	55.041	54.749	0.092	Open Manhole	10
ML4- 1.001	2V	-3	ML4-2	54.790	54.590	0.000	Open Manhole	10
ML4- 1.002	o	225	ML4-3	54.272	52.847	1.200	Open Manhole	1500
ML4- 2.000	2V	-3	ML4-4	54.949	54.749	0.000	Open Manhole	10
ML4- 2.001	2V	-3	ML4-5	54.787	54.587	0.000	Open Manhole	10
ML4- 2.002	o	225	ML4-6	54.472	53.047	1.200	Open Manhole	1500
ML4- 1.003	o	375	ML4-7	54.770	52.606	1.789	Open Manhole	1500
ML4- 1.004	o	375	ML4-8	54.298	52.366	1.557	Open Manhole	1500
ML4- 3.000	o	225	ML4-9	53.187	51.737	1.225	Open Manhole	600
ML4- 3.001	o	225	ML4-10	52.912	51.477	1.210	Open Manhole	1200
ML4- 1.005	o	375	ML4-11	53.229	51.240	1.614	Open Manhole	1500
ML4- 4.000	o	225	ML4-12	51.948	50.499	1.224	Open Manhole	600
ML4- 5.000	o	225	ML4-13	52.070	50.645	1.200	Open Manhole	600
ML4- 1.006	o	375	ML4-14	52.178	50.252	1.551	Open Manhole	1500
ML4- 6.000	2V	-3	ML4-15	54.260	54.060	0.000	Open Manhole	10
ML4- 6.001	2V	-3	ML4-16	54.103	53.903	0.000	Open Manhole	10
ML4- 6.002	2V	-3	ML4-17	53.971	53.771	0.000	Open Manhole	10
ML4- 6.003	2V	-3	ML4-18	53.900	53.700	0.000	Open Manhole	10
ML4- 6.004	2V	-3	ML4-19	53.739	53.539	0.000	Open Manhole	10
ML4- 6.005	2V	-3	ML4-20	52.181	51.981	0.000	Open Manhole	10
ML4- 6.006	o	525	ML4-21	49.992	48.755	0.712	Open Manhole	1500
ML4- 7.000	2V	-3	ML4-22	54.472	54.272	0.000	Open Manhole	10
ML4- 7.001	2V	-3	ML4-23	52.931	52.731	0.000	Open Manhole	10
ML4- 7.002	2V	-3	ML4-24	52.720	52.520	0.000	Open Manhole	10
ML4- 7.003	2V	-3	ML4-25	51.980	51.780	0.000	Open Manhole	10
ML4- 7.004	2V	-3	ML4-26	51.844	51.644	0.000	Open Manhole	10
ML4- 7.005	o	300	ML4-27	50.072	48.993	0.779	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)
ML4- 1.000	75.345	473.9	ML4-2	54.790	54.590	0.000	Open Manhole	10
ML4- 1.001	75.673	146.1	ML4-3	54.272	54.072	0.000	Open Manhole	1500
ML4- 1.002	13.633	149.8	ML4-7	54.770	52.756	1.789	Open Manhole	1500
ML4- 2.000	74.950	462.7	ML4-5	54.787	54.587	0.000	Open Manhole	10
ML4- 2.001	75.015	238.1	ML4-6	54.472	54.272	0.000	Open Manhole	1500
ML4- 2.002	12.161	43.3	ML4-7	54.770	52.766	1.779	Open Manhole	1500
ML4- 1.003	48.053	200.2	ML4-8	54.298	52.366	1.557	Open Manhole	1500
ML4- 1.004	80.740	71.7	ML4-11	53.229	51.240	1.614	Open Manhole	1500
ML4- 3.000	13.614	52.4	ML4-10	52.912	51.477	1.210	Open Manhole	1200
ML4- 3.001	13.008	149.5	ML4-11	53.229	51.390	1.614	Open Manhole	1500
ML4- 1.005	61.474	62.2	ML4-14	52.178	50.252	1.551	Open Manhole	1500
ML4- 4.000	14.523	149.7	ML4-14	52.178	50.402	1.551	Open Manhole	1500
ML4- 5.000	11.639	47.9	ML4-14	52.178	50.402	1.551	Open Manhole	1500
ML4- 1.006	84.948	59.4	ML4-29	50.398	48.823	1.200	Open Manhole	1500
ML4- 6.000	14.397	91.7	ML4-16	54.103	53.903	0.000	Open Manhole	10
ML4- 6.001	22.180	168.0	ML4-17	53.971	53.771	0.000	Open Manhole	10
ML4- 6.002	7.148	100.7	ML4-18	53.900	53.700	0.000	Open Manhole	10
ML4- 6.003	20.887	129.7	ML4-19	53.739	53.539	0.000	Open Manhole	10
ML4- 6.004	108.470	69.6	ML4-20	52.181	51.981	0.000	Open Manhole	10
ML4- 6.005	108.470	49.6	ML4-21	49.992	49.792	0.000	Open Manhole	1500
ML4- 6.006	12.281	149.8	ML4-29	50.398	48.673	1.200	Open Manhole	1500
ML4- 7.000	118.055	76.6	ML4-23	52.931	52.731	0.000	Open Manhole	10
ML4- 7.001	12.235	58.0	ML4-24	52.720	52.520	0.000	Open Manhole	10
ML4- 7.002	44.929	60.7	ML4-25	51.980	51.780	0.000	Open Manhole	10
ML4- 7.003	11.534	84.8	ML4-26	51.844	51.644	0.000	Open Manhole	10
ML4- 7.004	90.489	51.1	ML4-27	50.072	49.872	0.000	Open Manhole	1500
ML4- 7.005	14.154	150.6	ML4-29	50.398	48.899	1.199	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML04

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)
ML4- 1.007	o	525	ML4-29	50.398	48.673	1.200	Open Manhole	1500
ML4- 8.000	o	300	ML4-30	49.481	47.956	1.225	Open Manhole	600
ML4- 1.008	o	525	ML4-31	49.589	47.687	1.377	Open Manhole	1500
ML4- 1.009	o	525	ML4-32	47.378	45.652	1.201	Open Manhole	1500
ML4- 1.010	o	525	ML4-33	45.399	43.673	1.201	Open Manhole	1500
ML4- 9.000	2V	-3	ML4-34	49.970	49.770	0.000	Open Manhole	10
ML4- 9.001	2V	-3	ML4-35	47.922	47.722	0.000	Open Manhole	10
ML4- 9.002	2V	-3	ML4-36	45.527	45.327	0.000	Open Manhole	10
ML4- 9.003	o	450	ML4-37	43.131	41.956	0.725	Open Manhole	1500
ML4- 10.000	2V	-3	ML4-38	50.045	49.845	0.000	Open Manhole	10
ML4- 10.001	2V	-3	ML4-39	47.905	47.705	0.000	Open Manhole	10
ML4- 10.002	2V	-3	ML4-40	45.551	45.351	0.000	Open Manhole	10
ML4- 10.003	o	450	ML4-41	43.238	41.951	0.837	Open Manhole	1500
ML4- 1.011	o	600	ML4-42	43.523	41.722	1.201	Open Manhole	1500
ML4- 1.012	o	600	ML4-43	41.457	39.656	1.201	Open Manhole	1500
ML4- 1.013	o	600	ML4-44	39.554	37.754	1.200	Open Manhole	1800
ML4- 11.000	2V	-3	ML4-45	43.223	43.023	0.000	Open Manhole	10
ML4- 11.001	2V	-3	ML4-46	41.114	40.914	0.000	Open Manhole	10
ML4- 11.002	2V	-3	ML4-47	39.094	38.894	0.000	Open Manhole	10
ML4- 12.000	1 _/	450	ML4-48	40.491	40.041	0.000	Open Manhole	10
ML4- 12.001	o	225	ML4-49	39.710	35.700	3.785	Open Manhole	1500
ML4- 11.003	o	750	ML4-50	37.139	35.400	0.989	Open Manhole	1800
ML4- 1.014	o	750	ML4-51	37.517	35.126	1.641	Open Manhole	1800
ML4- 13.000	2V	-3	ML4-52	43.108	42.908	0.000	Open Manhole	10
ML4- 13.001	2V	-3	ML4-53	41.089	40.889	0.000	Open Manhole	10

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)
ML4- 1.007	36.180	36.7	ML4-31	49.589	47.687	1.377	Open Manhole	1500
ML4- 8.000	9.638	219.0	ML4-31	49.589	47.912	1.377	Open Manhole	1500
ML4- 1.008	98.920	48.6	ML4-32	47.378	45.652	1.201	Open Manhole	1500
ML4- 1.009	88.571	44.8	ML4-33	45.399	43.673	1.201	Open Manhole	1500
ML4- 1.010	83.927	44.7	ML4-42	43.523	41.797	1.201	Open Manhole	1500
ML4- 9.000	91.603	44.7	ML4-35	47.922	47.722	0.000	Open Manhole	10
ML4- 9.001	107.165	44.7	ML4-36	45.527	45.327	0.000	Open Manhole	10
ML4- 9.002	107.165	44.7	ML4-37	43.131	42.931	0.000	Open Manhole	1500
ML4- 9.003	12.538	149.3	ML4-42	43.523	41.872	1.201	Open Manhole	1500
ML4- 10.000	97.967	45.8	ML4-39	47.905	47.705	0.000	Open Manhole	10
ML4- 10.001	104.144	44.2	ML4-40	45.551	45.351	0.000	Open Manhole	10
ML4- 10.002	104.122	45.0	ML4-41	43.238	43.038	0.000	Open Manhole	1500
ML4- 10.003	11.646	149.3	ML4-42	43.523	41.873	1.200	Open Manhole	1500
ML4- 1.011	92.355	44.7	ML4-43	41.457	39.656	1.201	Open Manhole	1500
ML4- 1.012	85.142	44.8	ML4-44	39.554	37.754	1.200	Open Manhole	1800
ML4- 1.013	92.504	37.3	ML4-51	37.517	35.275	1.642	Open Manhole	1800
ML4- 11.000	89.216	42.3	ML4-46	41.114	40.914	0.000	Open Manhole	10
ML4- 11.001	95.565	47.3	ML4-47	39.094	38.894	0.000	Open Manhole	10
ML4- 11.002	87.890	43.0	ML4-50	37.139	36.850	0.089	Open Manhole	1800
ML4- 12.000	75.382	85.8	ML4-49	39.710	39.162	0.098	Open Manhole	1500
ML4- 12.001	11.639	38.8	ML4-50	37.139	35.400	1.514	Open Manhole	1800
ML4- 11.003	11.956	43.6	ML4-51	37.517	35.126	1.641	Open Manhole	1800
ML4- 1.014	12.135	100.3	ML4-55	37.121	35.005	1.366	Open Manhole	1800
ML4- 13.000	90.290	44.7	ML4-53	41.089	40.889	0.000	Open Manhole	10
ML4- 13.001	91.639	44.7	ML4-54	39.040	38.840	0.000	Open Manhole	10

PIPELINE SCHEDULES for SWS-ML04

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)
ML4- 13.002	2V	-3	ML4-54	39.040	38.840	0.000	Open Manhole	10
ML4- 1.015	o	750	ML4-55	37.121	35.005	1.366	Open Manhole	1800
ML4- 14.000	5 \/	150	ML4-56	37.167	36.932	0.085	Open Manhole	10
ML4- 1.016	o	750	ML4-57	36.318	34.281	1.287	Open Manhole	1800
ML4- 1.017	o	750	ML4-58	35.369	33.238	1.381	Open Manhole	1800
ML4- 15.000	o	225	ML4-59	34.734	33.151	1.358	Open Manhole	600
ML4- 1.018	o	750	ML4-60	34.583	32.387	1.446	Open Manhole	1800
ML4- 16.000	o	225	ML4-61	33.927	32.502	1.200	Open Manhole	600
ML4- 17.000	o	225	ML4-62	33.838	32.387	1.226	Open Manhole	600
ML4- 1.019	o	825	ML4-63	33.779	31.524	1.430	Open Manhole	1800
ML4- 1.020	o	825	ML4-64	33.270	31.074	1.371	Open Manhole	2100
ML4- 18.000	o	225	ML4-65	32.809	31.384	1.200	Open Manhole	600
ML4- 1.021	o	825	ML4-66	32.630	30.613	1.192	Open Manhole	1800
ML4- 1.022	o	825	ML4-67	32.327	30.310	1.192	Open Manhole	1800
ML4- 1.023	o	825	ML4-68	31.390	29.321	1.244	Open Manhole	1800
ML4- 19.000	o	225	ML4-69	32.138	30.672	1.241	Open Manhole	600
ML4- 20.000	o	225	ML4-70	31.751	30.289	1.237	Open Manhole	600
ML4- 19.001	o	225	ML4-71	31.537	30.020	1.292	Open Manhole	1050
ML4- 19.002	o	225	ML4-72	31.159	29.610	1.324	Open Manhole	1050
ML4- 21.000	2V	-3	ML4-73	31.685	31.394	0.091	Open Manhole	10
ML4- 21.001	2V	-3	ML4-74	31.199	30.927	0.072	Open Manhole	10

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)
ML4- 13.002	91.639	45.7	ML4-55	37.121	36.833	0.088	Open Manhole	1800
ML4- 1.015	58.358	80.6	ML4-57	36.318	34.281	1.287	Open Manhole	1800
ML4- 14.000	56.551	66.5	ML4-57	36.318	36.081	0.087	Open Manhole	1800
ML4- 1.016	98.653	94.6	ML4-58	35.369	33.238	1.381	Open Manhole	1800
ML4- 1.017	70.776	83.2	ML4-60	34.583	32.387	1.446	Open Manhole	1800
ML4- 15.000	2.338	9.8	ML4-60	34.583	32.912	1.446	Open Manhole	1800
ML4- 1.018	80.410	102.0	ML4-63	33.779	31.599	1.430	Open Manhole	1800
ML4- 16.000	7.120	18.8	ML4-63	33.779	32.124	1.430	Open Manhole	1800
ML4- 17.000	3.198	12.2	ML4-63	33.779	32.124	1.430	Open Manhole	1800
ML4- 1.019	55.727	123.8	ML4-64	33.270	31.074	1.371	Open Manhole	2100
ML4- 1.020	55.727	120.9	ML4-66	32.630	30.613	1.192	Open Manhole	1800
ML4- 18.000	3.276	19.2	ML4-66	32.630	31.213	1.192	Open Manhole	1800
ML4- 1.021	29.787	98.3	ML4-67	32.327	30.310	1.192	Open Manhole	1800
ML4- 1.022	99.763	100.9	ML4-68	31.390	29.321	1.244	Open Manhole	1800
ML4- 1.023	81.112	49.2	ML4-85	30.545	27.674	2.046	Open Manhole	1800
ML4- 19.000	19.139	29.4	ML4-71	31.537	30.020	1.292	Open Manhole	1050
ML4- 20.000	3.142	11.7	ML4-71	31.537	30.020	1.292	Open Manhole	1050
ML4- 19.001	53.966	131.6	ML4-72	31.159	29.610	1.324	Open Manhole	1050
ML4- 19.002	61.160	43.3	ML4-85	30.545	28.199	2.121	Open Manhole	1800
ML4- 21.000	53.496	114.6	ML4-74	31.199	30.927	0.072	Open Manhole	10
ML4- 21.001	61.534	91.4	ML4-85	30.545	30.254	0.091	Open Manhole	1800

PIPELINE SCHEDULES for SWS-ML04

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)
ML4- 22.000	5 \/	150	ML4-75	32.211	31.964	0.097	Open Manhole	10
ML4- 22.001	o	225	ML4-76	31.145	29.720	1.200	Open Manhole	1050
ML4- 23.000	2V	-3	ML4-77	36.351	36.062	0.089	Open Manhole	10
ML4- 23.001	2V	-3	ML4-78	35.509	35.127	0.182	Junction	
ML4- 23.002	2V	-3	ML4-79	34.783	34.337	0.246	Open Manhole	10
ML4- 23.003	2V	-3	ML4-80	33.610	33.410	0.000	Open Manhole	10
ML4- 23.004	2V	-3	ML4-81	33.432	33.062	0.170	Open Manhole	10
ML4- 23.005	2V	-3	ML4-82	32.681	32.464	0.017	Open Manhole	10
ML4- 23.006	2V	-3	ML4-83	32.326	32.135	-0.009	Junction	
ML4- 23.007	2V	-3	ML4-84	31.382	31.134	0.048	Open Manhole	10
ML4- 1.024	o	825	ML4-85	30.545	27.674	2.046	Open Manhole	1800
ML4- 1.025	o	825	ML4-86	28.313	26.405	1.083	Open Manhole	1800
ML4- 1.026	o	825	ML4-87	24.304	22.125	1.354	Open Manhole	1800
ML4- 24.000	2V	-3	ML4-88	32.382	32.091	0.091	Open Manhole	10
ML4- 24.001	2V	-3	ML4-89	32.198	31.913	0.085	Open Manhole	10
ML4- 25.000	o	225	ML4-90	32.194	30.677	1.292	Open Manhole	1050
ML4- 26.000	2V	-3	ML4-91	32.829	32.541	0.088	Open Manhole	10
ML4- 26.001	2V	-3	ML4-92	32.660	32.368	0.092	Open Manhole	10
ML4- 27.000	o	225	ML4-93	32.624	31.118	1.281	Open Manhole	1050
ML4- 26.002	o	225	ML4-94	32.236	30.568	1.443	Open Manhole	1050
ML4- 24.002	o	225	ML4-95	31.795	28.500	3.070	Open Manhole	1050
ML4- 1.027	o	900	ML4-96	23.816	22.000	0.916	Open Manhole	1800
ML4- 1.028	o	900	ML4-97	23.120	21.603	0.617	Open Manhole	1800
ML4- 1.029	o	900	ML4-FB	23.000	21.500	0.600	Open Manhole	1800
ML4- 1.030	o	900	ML4-IB	23.000	22.000	0.100	Open Manhole	1800
ML4- 28.000	g	-4	ML4-98	23.000	22.790	0.000	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)
ML4- 22.000	110.422	114.0	ML4-76	31.145	30.995	0.000	Open Manhole	1050
ML4- 22.001	13.546	8.9	ML4-85	30.545	28.199	2.121	Open Manhole	1800
ML4- 23.000	98.361	105.2	ML4-78	35.509	35.127	0.182	Junction	
ML4- 23.001	70.330	89.0	ML4-79	34.783	34.337	0.246	Open Manhole	10
ML4- 23.002	80.973	87.3	ML4-80	33.610	33.410	0.000	Open Manhole	10
ML4- 23.003	56.245	161.6	ML4-81	33.432	33.062	0.170	Open Manhole	10
ML4- 23.004	56.245	94.1	ML4-82	32.681	32.464	0.017	Open Manhole	10
ML4- 23.005	28.281	86.0	ML4-83	32.326	32.135	-0.009	Junction	
ML4- 23.006	99.685	99.6	ML4-84	31.382	31.134	0.048	Open Manhole	10
ML4- 23.007	81.176	92.2	ML4-85	30.545	30.254	0.091	Open Manhole	1800
ML4- 1.024	62.328	49.1	ML4-86	28.313	26.405	1.083	Open Manhole	1800
ML4- 1.025	72.357	17.2	ML4-87	24.304	22.200	1.279	Open Manhole	1800
ML4- 1.026	11.702	93.6	ML4-96	23.816	22.000	0.991	Open Manhole	1800
ML4- 24.000	81.706	459.0	ML4-89	32.198	31.913	0.085	Open Manhole	10
ML4- 24.001	63.373	154.6	ML4-95	31.795	31.503	0.092	Open Manhole	1050
ML4- 25.000	62.486	125.0	ML4-95	31.795	30.177	1.393	Open Manhole	1050
ML4- 26.000	80.944	467.9	ML4-92	32.660	32.368	0.092	Open Manhole	10
ML4- 26.001	81.106	206.4	ML4-94	32.236	31.975	0.061	Open Manhole	1050
ML4- 27.000	68.830	125.1	ML4-94	32.236	30.568	1.443	Open Manhole	1050
ML4- 26.002	19.893	50.9	ML4-95	31.795	30.177	1.393	Open Manhole	1050
ML4- 24.002	23.604	4.1	ML4-96	23.816	22.675	0.916	Open Manhole	1800
ML4- 1.027	57.620	145.1	ML4-97	23.120	21.603	0.617	Open Manhole	1800
ML4- 1.028	12.434	120.7	ML4-FB	23.000	21.500	0.600	Open Manhole	1800
ML4- 1.029	38.590	142.4	ML4-IB	23.000	21.229	0.871	Open Manhole	1800
ML4- 1.030	13.063	65.3	ML4-**	22.766	21.800	0.066	Open Manhole	1800
ML4- 28.000	7.577	40.1	ML4-91	22.836	22.601	0.025	Open Manhole	0

Free Flowing Outfall Details for SWS-ML04

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML4- 1.030	ML4-**	22.766	21.800	0.000	1800	0

Free Flowing Outfall Details for SWS-ML04

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML4- 28.000	ML4-91	22.836	22.601	0.000	0	0

Online Controls for SWS-ML04

Pump Manhole: ML4-IB, DS/PN: ML4- 1.030, Volume (m³): 25.9

Invert Level (m) 22.000

Depth (m)	Flow (l/s)
5.000	0.0000

Offline Controls for SWS-ML04

Pipe Manhole: ML4-73, DS/PN: ML4- 21.000, Loop to PN: ML4- 19.001

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.394
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-74, DS/PN: ML4- 21.001, Loop to PN: ML4- 19.002

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	30.927
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-77, DS/PN: ML4- 23.000, Loop to PN: ML4- 1.016

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	36.062
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-78, DS/PN: ML4- 23.001, Loop to PN: ML4- 1.017

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	35.127
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-79, DS/PN: ML4- 23.002, Loop to PN: ML4- 1.018

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	34.337
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-80, DS/PN: ML4- 23.003, Loop to PN: ML4- 1.019

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	33.410
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-81, DS/PN: ML4- 23.004, Loop to PN: ML4- 1.020

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	33.062
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-82, DS/PN: ML4- 23.005, Loop to PN: ML4- 1.021

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	32.464
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-83, DS/PN: ML4- 23.006, Loop to PN: ML4- 1.022

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	32.136
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-84, DS/PN: ML4- 23.007, Loop to PN: ML4- 1.023

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.134
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-89, DS/PN: ML4- 24.001, Loop to PN: ML4- 25.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	31.913
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML4-92, DS/PN: ML4- 26.001, Loop to PN: ML4- 27.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	32.368
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Storage Structures for SWS-ML04

Infiltration Basin Manhole: ML4-FB, DS/PN: ML4- 1.029

Invert Level (m) 21.500 Infiltration Coefficient Side (m/hr) 0.00890 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	513.7	1.500	980.8

Infiltration Basin Manhole: ML4-IB, DS/PN: ML4- 1.030

Invert Level (m) 21.000 Infiltration Coefficient Side (m/hr) 0.00890 Porosity 1.00
Infiltration Coefficient Base (m/hr) 0.00890 Safety Factor 5.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	6437.3	1.600	8315.2	1.601	8648.5	2.000	9195.2

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 12 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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
Climate Change (%)	20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.000	ML4-1	15 minute 1 year Winter I+20%	55.041	54.833	-0.116	0.000	0.15	0.000	0.1	17.0	FLOOD RISK
ML4- 1.001	ML4-2	15 minute 1 year Winter I+20%	54.790	54.670	-0.120	0.000	0.16	2.611	0.3	31.4	FLOOD RISK
ML4- 1.002	ML4-3	15 minute 1 year Winter I+20%	54.272	53.009	-0.063	0.000	0.86	0.278	1.0	31.7	OK
ML4- 2.000	ML4-4	15 minute 1 year Winter I+20%	54.949	54.837	-0.112	0.000	0.16	0.000	0.1	18.5	FLOOD RISK
ML4- 2.001	ML4-5	15 minute 1 year Winter I+20%	54.787	54.662	-0.125	0.000	0.14	2.369	0.2	21.8	FLOOD RISK
ML4- 2.002	ML4-6	15 minute 1 year Winter I+20%	54.472	53.134	-0.138	0.000	0.32	0.145	1.5	21.8	OK
ML4- 1.003	ML4-7	15 minute 1 year Winter I+20%	54.770	52.772	-0.209	0.000	0.40	0.298	1.1	52.4	OK
ML4- 1.004	ML4-8	15 minute 1 year Winter I+20%	54.298	52.488	-0.253	0.000	0.23	0.531	1.7	51.4	OK
ML4- 3.000	ML4-9	15 minute 1 year Winter I+20%	53.187	51.833	-0.129	0.000	0.38	0.026	1.5	23.7	OK
ML4- 3.001	ML4-10	15 minute 1 year Winter I+20%	52.912	51.610	-0.092	0.000	0.64	0.218	1.0	23.3	OK
ML4- 1.005	ML4-11	15 minute 1 year Winter I+20%	53.229	51.365	-0.250	0.000	0.25	0.344	1.8	58.4	OK
ML4- 4.000	ML4-12	15 minute 1 year Winter I+20%	51.948	50.577	-0.147	0.000	0.26	0.021	0.8	9.5	OK
ML4- 5.000	ML4-13	15 minute 1 year Winter I+20%	52.070	50.713	-0.157	0.000	0.20	0.018	1.3	12.7	OK
ML4- 1.006	ML4-14	15 minute 1 year Winter I+20%	52.178	50.383	-0.244	0.000	0.26	0.354	1.9	65.5	OK
ML4- 6.000	ML4-15	15 minute 1 year Winter I+20%	54.260	54.117	-0.143	0.000	0.08	0.000	0.3	20.4	FLOOD RISK
ML4- 6.001	ML4-16	15 minute 1 year Winter I+20%	54.103	53.970	-0.133	0.000	0.11	0.414	0.2	20.3	FLOOD RISK
ML4- 6.002	ML4-17	15 minute 1 year Winter I+20%	53.971	53.829	-0.142	0.000	0.09	0.654	0.3	20.1	FLOOD RISK
ML4- 6.003	ML4-18	15 minute 1 year Winter I+20%	53.900	53.762	-0.138	0.000	0.09	0.391	0.2	20.0	FLOOD RISK
ML4- 6.004	ML4-19	15 minute 1 year Winter I+20%	53.739	53.614	-0.125	0.000	0.12	0.668	0.4	34.9	FLOOD RISK
ML4- 6.005	ML4-20	15 minute 1 year Winter I+20%	52.181	52.060	-0.121	0.000	0.15	0.378	0.4	52.4	FLOOD RISK
ML4- 6.006	ML4-21	15 minute 1 year Winter I+20%	49.992	48.917	-0.363	0.000	0.21	0.278	0.9	52.4	OK
ML4- 7.000	ML4-22	15 minute 1 year Winter I+20%	54.472	54.313	-0.159	0.000	0.04	0.000	0.2	11.1	FLOOD RISK
ML4- 7.001	ML4-23	15 minute 1 year Winter I+20%	52.931	52.777	-0.154	0.000	0.06	0.231	0.3	18.2	FLOOD RISK
ML4- 7.002	ML4-24	15 minute 1 year Winter I+20%	52.720	52.566	-0.154	0.000	0.06	0.175	0.3	17.8	FLOOD RISK
ML4- 7.003	ML4-25	15 minute 1 year Winter I+20%	51.980	51.830	-0.150	0.000	0.07	0.202	0.3	17.8	FLOOD RISK
ML4- 7.004	ML4-26	15 minute 1 year Winter I+20%	51.844	51.697	-0.147	0.000	0.07	0.295	0.3	24.2	FLOOD RISK
ML4- 7.005	ML4-27	15 minute 1 year Winter I+20%	50.072	49.111	-0.182	0.000	0.32	0.200	1.0	24.3	OK
ML4- 1.007	ML4-29	15 minute 1 year Winter I+20%	50.398	48.833	-0.365	0.000	0.21	0.634	2.5	142.0	OK
ML4- 8.000	ML4-30	15 minute 1 year Winter I+20%	49.481	48.097	-0.159	0.000	0.44	0.038	0.8	25.8	OK
ML4- 1.008	ML4-31	15 minute 1 year Winter I+20%	49.589	47.857	-0.355	0.000	0.23	0.451	2.5	149.8	OK
ML4- 1.009	ML4-32	15 minute 1 year Winter I+20%	47.378	45.818	-0.359	0.000	0.22	0.492	2.5	149.1	OK
ML4- 1.010	ML4-33	15 minute 1 year Winter I+20%	45.399	43.839	-0.359	0.000	0.22	0.476	2.5	149.2	OK
ML4- 9.000	ML4-34	15 minute 1 year Winter I+20%	49.970	49.818	-0.152	0.000	0.05	0.000	0.3	19.3	FLOOD RISK
ML4- 9.001	ML4-35	15 minute 1 year Winter I+20%	47.922	47.789	-0.133	0.000	0.10	0.202	0.4	34.6	FLOOD RISK
ML4- 9.002	ML4-36	15 minute 1 year Winter I+20%	45.527	45.404	-0.123	0.000	0.14	0.234	0.4	51.5	FLOOD RISK
ML4- 9.003	ML4-37	15 minute 1 year Winter I+20%	43.131	42.126	-0.280	0.000	0.31	0.292	0.9	51.7	OK
ML4- 10.000	ML4-38	15 minute 1 year Winter I+20%	50.045	49.890	-0.155	0.000	0.05	0.000	0.3	17.4	FLOOD RISK
ML4- 10.001	ML4-39	15 minute 1 year Winter I+20%	47.905	47.771	-0.134	0.000	0.09	0.204	0.4	34.1	FLOOD RISK
ML4- 10.002	ML4-40	15 minute 1 year Winter I+20%	45.551	45.429	-0.122	0.000	0.15	0.237	0.5	53.7	FLOOD RISK
ML4- 10.003	ML4-41	15 minute 1 year Winter I+20%	43.238	42.125	-0.276	0.000	0.32	0.299	1.0	53.6	OK
ML4- 1.011	ML4-42	15 minute 1 year Winter I+20%	43.523	41.930	-0.392	0.000	0.26	0.520	2.9	251.5	OK
ML4- 1.012	ML4-43	15 minute 1 year Winter I+20%	41.457	39.865	-0.391	0.000	0.26	0.680	2.9	250.9	OK
ML4- 1.013	ML4-44	15 minute 1 year Winter I+20%	39.554	37.952	-0.402	0.000	0.24	0.776	3.1	250.2	OK
ML4- 11.000	ML4-45	15 minute 1 year Winter I+20%	43.223	43.072	-0.151	0.000	0.06	0.000	0.4	20.6	FLOOD RISK
ML4- 11.001	ML4-46	15 minute 1 year Winter I+20%	41.114	40.982	-0.132	0.000	0.10	0.196	0.4	36.1	FLOOD RISK
ML4- 11.002	ML4-47	15 minute 1 year Winter I+20%	39.094	38.970	-0.124	0.000	0.14	0.245	0.5	51.9	FLOOD RISK
ML4- 12.000	ML4-48	15 minute 1 year Winter I+20%	40.491	40.150	-0.341	0.000	0.07	0.000	0.3	15.2	OK
ML4- 12.001	ML4-49	15 minute 1 year Winter I+20%	39.710	35.771	-0.154	0.000	0.22	0.133	1.4	15.4	OK
ML4- 11.003	ML4-50	15 minute 1 year Winter I+20%	37.139	35.541	-0.609	0.000	0.08	0.403	1.1	64.3	OK
ML4- 1.014	ML4-51	15 minute 1 year Winter I+20%	37.517	35.501	-0.375	0.000	0.50	2.514	1.4	302.8	OK
ML4- 13.000	ML4-52	15 minute 1 year Winter I+20%	43.108	42.954	-0.154	0.000	0.05	0.000	0.3	17.9	FLOOD RISK
ML4- 13.001	ML4-53	15 minute 1 year Winter I+20%	41.089	40.951	-0.138	0.000	0.09	0.188	0.4	31.0	FLOOD RISK
ML4- 13.002	ML4-54	15 minute 1 year Winter I+20%	39.040	38.912	-0.128	0.000	0.13	0.220	0.4	46.0	FLOOD RISK

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.015	ML4-55	15 minute 1 year Winter I+20%	37.121	35.280	-0.475	0.000	0.29	1.652	2.4	343.7	OK
ML4- 14.000	ML4-56	15 minute 1 year Winter I+20%	37.167	36.991	-0.091	0.000	0.09	0.000	0.8	13.4	FLOOD RISK
ML4- 1.016	ML4-57	15 minute 1 year Winter I+20%	36.318	34.577	-0.454	0.000	0.33	2.335	2.1	344.7	OK
ML4- 1.017	ML4-58	15 minute 1 year Winter I+20%	35.369	33.526	-0.462	0.000	0.31	2.438	2.2	343.5	OK
ML4- 15.000	ML4-59	15 minute 1 year Winter I+20%	34.734	33.247	-0.129	0.000	0.38	0.026	1.6	26.1	OK
ML4- 1.018	ML4-60	15 minute 1 year Winter I+20%	34.583	32.692	-0.445	0.000	0.35	2.437	2.1	345.1	OK
ML4- 16.000	ML4-61	15 minute 1 year Winter I+20%	33.927	32.560	-0.167	0.000	0.15	0.015	1.6	13.1	OK
ML4- 17.000	ML4-62	15 minute 1 year Winter I+20%	33.838	32.444	-0.168	0.000	0.14	0.015	1.3	10.5	OK
ML4- 1.019	ML4-63	15 minute 1 year Winter I+20%	33.779	31.840	-0.509	0.000	0.31	1.990	1.8	347.1	OK
ML4- 1.020	ML4-64	15 minute 1 year Winter I+20%	33.270	31.388	-0.511	0.000	0.31	3.909	1.9	346.8	OK
ML4- 18.000	ML4-65	15 minute 1 year Winter I+20%	32.809	31.479	-0.130	0.000	0.37	0.026	1.4	21.7	OK
ML4- 1.021	ML4-66	15 minute 1 year Winter I+20%	32.630	30.942	-0.496	0.000	0.33	3.978	1.8	348.9	OK
ML4- 1.022	ML4-67	15 minute 1 year Winter I+20%	32.327	30.600	-0.535	0.000	0.27	2.560	2.1	347.9	OK
ML4- 1.023	ML4-68	15 minute 1 year Winter I+20%	31.390	29.565	-0.581	0.000	0.19	1.944	2.7	350.2	OK
ML4- 19.000	ML4-69	15 minute 1 year Winter I+20%	32.138	30.703	-0.194	0.000	0.05	0.007	1.2	4.0	OK
ML4- 20.000	ML4-70	15 minute 1 year Winter I+20%	31.751	30.338	-0.176	0.000	0.11	0.012	1.2	7.7	OK
ML4- 19.001	ML4-71	15 minute 1 year Winter I+20%	31.537	30.106	-0.139	0.000	0.30	0.091	0.9	11.4	OK
ML4- 19.002	ML4-72	15 minute 1 year Winter I+20%	31.159	29.673	-0.162	0.000	0.17	0.103	1.3	11.7	OK
ML4- 21.000	ML4-73	15 minute 1 year Winter I+20%	31.685	31.402	-0.192	0.000	0.01	0.000	1.3	11.2	FLOOD RISK
ML4- 21.001	ML4-74	15 minute 1 year Winter I+20%	31.199	30.942	-0.185	0.000	0.02	0.082	1.5	22.6	FLOOD RISK
ML4- 22.000	ML4-75	15 minute 1 year Winter I+20%	32.211	32.043	-0.071	0.000	0.18	0.000	0.7	21.8	FLOOD RISK
ML4- 22.001	ML4-76	15 minute 1 year Winter I+20%	31.145	29.777	-0.168	0.000	0.14	0.058	2.8	21.9	OK
ML4- 23.000	ML4-77	15 minute 1 year Winter I+20%	36.351	36.071	-0.191	0.000	0.01	0.000	1.5	12.6	FLOOD RISK
ML4- 23.001	ML4-78	15 minute 1 year Winter I+20%	35.509	35.173	-0.154	0.000	0.05	0.354	0.2	13.5	OK
ML4- 23.002	ML4-79	15 minute 1 year Winter I+20%	34.783	34.387	-0.150	0.000	0.06	0.291	0.3	15.6	OK
ML4- 23.003	ML4-80	15 minute 1 year Winter I+20%	33.610	33.466	-0.144	0.000	0.08	0.326	0.2	14.6	FLOOD RISK
ML4- 23.004	ML4-81	15 minute 1 year Winter I+20%	33.432	33.109	-0.153	0.000	0.06	0.498	0.2	14.7	OK
ML4- 23.005	ML4-82	15 minute 1 year Winter I+20%	32.681	32.512	-0.152	0.000	0.06	0.297	0.3	16.2	FLOOD RISK
ML4- 23.006	ML4-83	15 minute 1 year Winter I+20%	32.326	32.204	-0.131	0.000	0.11	0.468	0.3	26.0	FLOOD RISK*
ML4- 23.007	ML4-84	15 minute 1 year Winter I+20%	31.382	31.210	-0.124	0.000	0.14	0.515	0.3	35.3	FLOOD RISK
ML4- 1.024	ML4-85	15 minute 1 year Winter I+20%	30.545	27.917	-0.582	0.000	0.19	1.254	2.8	370.6	OK
ML4- 1.025	ML4-86	15 minute 1 year Winter I+20%	28.313	26.587	-0.643	0.000	0.11	0.768	4.2	370.9	OK
ML4- 1.026	ML4-87	15 minute 1 year Winter I+20%	24.304	22.529	-0.421	0.000	0.48	1.456	1.4	371.2	OK
ML4- 24.000	ML4-88	15 minute 1 year Winter I+20%	32.382	32.163	-0.128	0.000	0.11	0.000	0.1	12.6	FLOOD RISK
ML4- 24.001	ML4-89	15 minute 1 year Winter I+20%	32.198	31.975	-0.138	0.000	0.09	1.908	0.2	18.4	FLOOD RISK
ML4- 25.000	ML4-90	15 minute 1 year Winter I+20%	32.194	30.723	-0.179	0.000	0.10	0.036	0.6	3.8	OK
ML4- 26.000	ML4-91	15 minute 1 year Winter I+20%	32.829	32.622	-0.119	0.000	0.14	0.000	0.1	15.8	FLOOD RISK
ML4- 26.001	ML4-92	15 minute 1 year Winter I+20%	32.660	32.445	-0.123	0.000	0.15	2.477	0.2	24.7	FLOOD RISK
ML4- 27.000	ML4-93	15 minute 1 year Winter I+20%	32.624	31.175	-0.168	0.000	0.14	0.045	0.7	5.5	OK
ML4- 26.002	ML4-94	15 minute 1 year Winter I+20%	32.236	30.675	-0.118	0.000	0.46	0.185	1.6	30.3	OK
ML4- 24.002	ML4-95	15 minute 1 year Winter I+20%	31.795	28.571	-0.154	0.000	0.22	0.057	4.9	52.3	OK
ML4- 1.027	ML4-96	30 minute 1 year Winter I+20%	23.816	22.325	-0.575	0.000	0.28	2.089	1.9	389.6	OK
ML4- 1.028	ML4-97	30 minute 1 year Winter I+20%	23.120	22.002	-0.501	0.000	0.41	7.282	1.4	390.4	OK
ML4- 1.029	ML4-FB	30 minute 1 year Winter I+20%	23.000	21.825	-0.575	0.000	0.28	183.604	1.6	332.7	OK
ML4- 1.030	ML4-IB	4320 minute 1 year Winter I+20%	23.000	21.312	-1.588	0.000	0.00	2060.152	0.0	0.0	OK
ML4- 28.000	ML4-98	15 minute 1 year Summer I+20%	23.000	22.790	-0.210	0.000	0.00	0.000	0.0	0.0	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

Simulation Criteria

Areal Reduction Factor 1.000 | Manhole Headloss Coeff (Global) 0.500 | MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 | Foul Sewage per hectare (l/s) 0.000 | Inlet Coeffiecient 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 12 | Number of Time/Area Diagrams 0
Number of Online Controls 1 | Number of Storage Structures 2 | Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH | Data Type Catchment
FEH Rainfall Version 2013 | Cv (Summer) 0.750
Site Location GB 610500 313350 TG 10500 13350 | Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 | DTS Status OFF | Inertia Status ON
Analysis Timestep Fine | DVD 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): 5, 10, 30, 100
Climate Change (%): 20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.000	ML4-1	15 minute 5 year Winter I+20%	55.041	54.858	-0.091	0.000	0.24	0.000	0.2	27.1	FLOOD RISK
ML4- 1.001	ML4-2	15 minute 5 year Winter I+20%	54.790	54.693	-0.097	0.000	0.25	3.398	0.3	49.7	FLOOD RISK
ML4- 1.002	ML4-3	15 minute 5 year Winter I+20%	54.272	53.138	0.066	0.000	1.35	0.506	1.3	49.9	SURCHARGED
ML4- 2.000	ML4-4	15 minute 5 year Winter I+20%	54.949	54.862	-0.087	0.000	0.26	0.000	0.2	29.4	FLOOD RISK
ML4- 2.001	ML4-5	15 minute 5 year Winter I+20%	54.787	54.685	-0.102	0.000	0.22	3.138	0.2	35.2	FLOOD RISK
ML4- 2.002	ML4-6	15 minute 5 year Winter I+20%	54.472	53.162	-0.110	0.000	0.52	0.195	1.7	35.2	OK
ML4- 1.003	ML4-7	15 minute 5 year Winter I+20%	54.770	52.827	-0.154	0.000	0.65	0.446	1.3	84.0	OK
ML4- 1.004	ML4-8	15 minute 5 year Winter I+20%	54.298	52.524	-0.217	0.000	0.37	0.883	1.9	82.6	OK
ML4- 3.000	ML4-9	15 minute 5 year Winter I+20%	53.187	51.864	-0.098	0.000	0.60	0.034	1.7	37.7	OK
ML4- 3.001	ML4-10	15 minute 5 year Winter I+20%	52.912	51.683	-0.019	0.000	1.00	0.400	1.1	36.7	OK
ML4- 1.005	ML4-11	15 minute 5 year Winter I+20%	53.229	51.403	-0.212	0.000	0.40	0.529	2.0	94.3	OK
ML4- 4.000	ML4-12	15 minute 5 year Winter I+20%	51.948	50.599	-0.125	0.000	0.41	0.027	0.9	15.2	OK
ML4- 5.000	ML4-13	15 minute 5 year Winter I+20%	52.070	50.732	-0.138	0.000	0.32	0.023	1.4	20.2	OK
ML4- 1.006	ML4-14	15 minute 5 year Winter I+20%	52.178	50.425	-0.202	0.000	0.43	0.546	2.2	107.1	OK
ML4- 6.000	ML4-15	15 minute 5 year Winter I+20%	54.260	54.133	-0.127	0.000	0.13	0.000	0.3	32.5	FLOOD RISK
ML4- 6.001	ML4-16	15 minute 5 year Winter I+20%	54.103	53.988	-0.115	0.000	0.17	0.539	0.2	32.4	FLOOD RISK
ML4- 6.002	ML4-17	15 minute 5 year Winter I+20%	53.971	53.845	-0.126	0.000	0.14	0.845	0.3	32.0	FLOOD RISK
ML4- 6.003	ML4-18	15 minute 5 year Winter I+20%	53.900	53.779	-0.121	0.000	0.15	0.506	0.3	32.0	FLOOD RISK
ML4- 6.004	ML4-19	15 minute 5 year Winter I+20%	53.739	53.638	-0.101	0.000	0.19	0.889	0.4	55.9	FLOOD RISK
ML4- 6.005	ML4-20	15 minute 5 year Winter I+20%	52.181	52.084	-0.097	0.000	0.25	0.501	0.5	84.7	FLOOD RISK
ML4- 6.006	ML4-21	15 minute 5 year Winter I+20%	49.992	48.965	-0.315	0.000	0.34	0.363	1.0	84.7	OK
ML4- 7.000	ML4-22	15 minute 5 year Winter I+20%	54.472	54.327	-0.145	0.000	0.06	0.000	0.3	17.6	FLOOD RISK
ML4- 7.001	ML4-23	15 minute 5 year Winter I+20%	52.931	52.793	-0.138	0.000	0.09	0.317	0.3	28.9	FLOOD RISK
ML4- 7.002	ML4-24	15 minute 5 year Winter I+20%	52.720	52.582	-0.138	0.000	0.09	0.240	0.3	28.2	FLOOD RISK
ML4- 7.003	ML4-25	15 minute 5 year Winter I+20%	51.980	51.846	-0.134	0.000	0.11	0.270	0.3	28.2	FLOOD RISK
ML4- 7.004	ML4-26	15 minute 5 year Winter I+20%	51.844	51.712	-0.132	0.000	0.11	0.391	0.4	38.6	FLOOD RISK
ML4- 7.005	ML4-27	15 minute 5 year Winter I+20%	50.072	49.147	-0.146	0.000	0.51	0.264	1.1	38.5	OK
ML4- 1.007	ML4-29	15 minute 5 year Winter I+20%	50.398	48.881	-0.317	0.000	0.33	0.935	2.9	229.8	OK
ML4- 8.000	ML4-30	15 minute 5 year Winter I+20%	49.481	48.144	-0.112	0.000	0.71	0.052	0.9	41.1	OK
ML4- 1.008	ML4-31	15 minute 5 year Winter I+20%	49.589	47.909	-0.303	0.000	0.37	0.675	2.8	243.2	OK
ML4- 1.009	ML4-32	15 minute 5 year Winter I+20%	47.378	45.869	-0.308	0.000	0.36	0.733	2.9	242.5	OK
ML4- 1.010	ML4-33	15 minute 5 year Winter I+20%	45.399	43.890	-0.308	0.000	0.36	0.705	2.9	242.1	OK
ML4- 9.000	ML4-34	15 minute 5 year Winter I+20%	49.970	49.833	-0.137	0.000	0.08	0.000	0.4	30.7	FLOOD RISK
ML4- 9.001	ML4-35	15 minute 5 year Winter I+20%	47.922	47.807	-0.115	0.000	0.15	0.263	0.5	55.1	FLOOD RISK
ML4- 9.002	ML4-36	15 minute 5 year Winter I+20%	45.527	45.426	-0.101	0.000	0.23	0.309	0.5	82.0	FLOOD RISK
ML4- 9.003	ML4-37	15 minute 5 year Winter I+20%	43.131	42.178	-0.228	0.000	0.49	0.384	1.1	82.3	OK
ML4- 10.000	ML4-38	15 minute 5 year Winter I+20%	50.045	49.906	-0.139	0.000	0.08	0.000	0.4	27.7	FLOOD RISK
ML4- 10.001	ML4-39	15 minute 5 year Winter I+20%	47.905	47.789	-0.116	0.000	0.15	0.265	0.5	54.3	FLOOD RISK
ML4- 10.002	ML4-40	15 minute 5 year Winter I+20%	45.551	45.452	-0.099	0.000	0.24	0.312	0.5	85.6	FLOOD RISK
ML4- 10.003	ML4-41	15 minute 5 year Winter I+20%	43.238	42.179	-0.222	0.000	0.50	0.393	1.1	85.4	OK
ML4- 1.011	ML4-42	15 minute 5 year Winter I+20%	43.523	41.994	-0.328	0.000	0.42	1.169	3.3	405.7	OK
ML4- 1.012	ML4-43	15 minute 5 year Winter I+20%	41.457	39.929	-0.327	0.000	0.43	1.110	3.2	405.2	OK
ML4- 1.013	ML4-44	15 minute 5 year Winter I+20%	39.554	38.012	-0.342	0.000	0.39	1.206	3.5	403.3	OK
ML4- 11.000	ML4-45	15 minute 5 year Winter I+20%	43.223	43.087	-0.136	0.000	0.09	0.000	0.4	32.7	FLOOD RISK
ML4- 11.001	ML4-46	15 minute 5 year Winter I+20%	41.114	41.002	-0.112	0.000	0.16	0.256	0.5	57.5	FLOOD RISK
ML4- 11.002	ML4-47	15 minute 5 year Winter I+20%	39.094	38.992	-0.102	0.000	0.22	0.323	0.5	82.6	FLOOD RISK
ML4- 12.000	ML4-48	15 minute 5 year Winter I+20%	40.491	40.184	-0.307	0.000	0.12	0.000	0.3	24.1	OK
ML4- 12.001	ML4-49	15 minute 5 year Winter I+20%	39.710	35.792	-0.133	0.000	0.34	0.175	1.6	24.4	OK
ML4- 11.003	ML4-50	15 minute 5 year Winter I+20%	37.139	35.651	-0.499	0.000	0.12	0.805	1.3	101.1	OK
ML4- 1.014	ML4-51	15 minute 5 year Winter I+20%	37.517	35.639	-0.237	0.000	0.80	4.507	1.5	486.7	OK
ML4- 13.000	ML4-52	15 minute 5 year Winter I+20%	43.108	42.969	-0.139	0.000	0.08	0.000	0.4	28.5	FLOOD RISK
ML4- 13.001	ML4-53	15 minute 5 year Winter I+20%	41.089	40.968	-0.121	0.000	0.14	0.242	0.5	49.3	FLOOD RISK
ML4- 13.002	ML4-54	15 minute 5 year Winter I+20%	39.040	38.933	-0.107	0.000	0.20	0.288	0.5	73.3	FLOOD RISK
ML4- 1.015	ML4-55	15 minute 5 year Winter I+20%	37.121	35.365	-0.390	0.000	0.46	2.465	2.6	550.9	OK
ML4- 14.000	ML4-56	15 minute 5 year Winter I+20%	37.167	37.002	-0.080	0.000	0.14	0.000	0.9	21.3	FLOOD RISK
ML4- 1.016	ML4-57	15 minute 5 year Winter I+20%	36.318	34.669	-0.362	0.000	0.52	3.997	2.4	552.5	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.017	ML4-58	15 minute 5 year Winter I+20%	35.369	33.616	-0.372	0.000	0.50	4.235	2.5	551.1	OK
ML4- 15.000	ML4-59	15 minute 5 year Winter I+20%	34.734	33.278	-0.098	0.000	0.60	0.034	1.8	41.5	OK
ML4- 1.018	ML4-60	15 minute 5 year Winter I+20%	34.583	32.787	-0.350	0.000	0.55	4.240	2.3	551.9	OK
ML4- 16.000	ML4-61	15 minute 5 year Winter I+20%	33.927	32.577	-0.150	0.000	0.24	0.020	1.8	20.9	OK
ML4- 17.000	ML4-62	15 minute 5 year Winter I+20%	33.838	32.460	-0.152	0.000	0.23	0.019	1.5	16.7	OK
ML4- 1.019	ML4-63	15 minute 5 year Winter I+20%	33.779	31.938	-0.411	0.000	0.50	3.748	2.1	556.3	OK
ML4- 1.020	ML4-64	15 minute 5 year Winter I+20%	33.270	31.485	-0.414	0.000	0.49	6.807	2.1	554.5	OK
ML4- 18.000	ML4-65	15 minute 5 year Winter I+20%	32.809	31.510	-0.099	0.000	0.59	0.034	1.5	34.6	OK
ML4- 1.021	ML4-66	15 minute 5 year Winter I+20%	32.630	31.043	-0.395	0.000	0.54	7.027	2.0	558.5	OK
ML4- 1.022	ML4-67	15 minute 5 year Winter I+20%	32.327	30.687	-0.448	0.000	0.43	4.313	2.4	556.5	OK
ML4- 1.023	ML4-68	15 minute 5 year Winter I+20%	31.390	29.632	-0.514	0.000	0.31	3.087	3.0	559.4	OK
ML4- 19.000	ML4-69	15 minute 5 year Winter I+20%	32.138	30.712	-0.185	0.000	0.07	0.010	1.3	6.4	OK
ML4- 20.000	ML4-70	15 minute 5 year Winter I+20%	31.751	30.351	-0.163	0.000	0.17	0.016	1.4	12.2	OK
ML4- 19.001	ML4-71	15 minute 5 year Winter I+20%	31.537	30.132	-0.113	0.000	0.47	0.126	1.0	18.2	OK
ML4- 19.002	ML4-72	15 minute 5 year Winter I+20%	31.159	29.690	-0.145	0.000	0.28	0.135	1.5	18.6	OK
ML4- 21.000	ML4-73	15 minute 5 year Winter I+20%	31.685	31.407	-0.187	0.000	0.01	0.000	1.5	17.7	FLOOD RISK
ML4- 21.001	ML4-74	15 minute 5 year Winter I+20%	31.199	30.949	-0.178	0.000	0.02	0.139	1.5	35.8	FLOOD RISK
ML4- 22.000	ML4-75	15 minute 5 year Winter I+20%	32.211	32.058	-0.056	0.000	0.28	0.000	0.8	34.6	FLOOD RISK
ML4- 22.001	ML4-76	15 minute 5 year Winter I+20%	31.145	29.794	-0.151	0.000	0.23	0.077	3.1	34.9	OK
ML4- 23.000	ML4-77	15 minute 5 year Winter I+20%	36.351	36.076	-0.186	0.000	0.01	0.000	1.4	20.1	FLOOD RISK
ML4- 23.001	ML4-78	15 minute 5 year Winter I+20%	35.509	35.188	-0.139	0.000	0.08	0.484	0.3	21.1	OK
ML4- 23.002	ML4-79	15 minute 5 year Winter I+20%	34.783	34.402	-0.135	0.000	0.09	0.388	0.3	24.3	OK
ML4- 23.003	ML4-80	15 minute 5 year Winter I+20%	33.610	33.481	-0.129	0.000	0.12	0.422	0.2	23.1	FLOOD RISK
ML4- 23.004	ML4-81	15 minute 5 year Winter I+20%	33.432	33.124	-0.138	0.000	0.09	0.674	0.3	23.0	OK
ML4- 23.005	ML4-82	15 minute 5 year Winter I+20%	32.681	32.527	-0.137	0.000	0.10	0.399	0.3	25.2	FLOOD RISK
ML4- 23.006	ML4-83	15 minute 5 year Winter I+20%	32.326	32.224	-0.111	0.000	0.17	0.610	0.3	41.4	FLOOD RISK*
ML4- 23.007	ML4-84	15 minute 5 year Winter I+20%	31.382	31.233	-0.101	0.000	0.22	0.681	0.4	56.6	FLOOD RISK
ML4- 1.024	ML4-85	30 minute 5 year Winter I+20%	30.545	27.988	-0.511	0.000	0.31	1.932	3.2	601.6	OK
ML4- 1.025	ML4-86	30 minute 5 year Winter I+20%	28.313	26.640	-0.590	0.000	0.18	1.170	4.8	601.6	OK
ML4- 1.026	ML4-87	30 minute 5 year Winter I+20%	24.304	22.679	-0.271	0.000	0.79	2.505	1.6	605.7	OK
ML4- 24.000	ML4-88	15 minute 5 year Winter I+20%	32.382	32.183	-0.108	0.000	0.18	0.000	0.2	20.0	FLOOD RISK
ML4- 24.001	ML4-89	15 minute 5 year Winter I+20%	32.198	31.992	-0.121	0.000	0.15	2.494	0.2	30.0	FLOOD RISK
ML4- 25.000	ML4-90	15 minute 5 year Winter I+20%	32.194	30.735	-0.167	0.000	0.15	0.046	0.7	6.0	OK
ML4- 26.000	ML4-91	15 minute 5 year Winter I+20%	32.829	32.646	-0.095	0.000	0.22	0.000	0.2	25.2	FLOOD RISK
ML4- 26.001	ML4-92	15 minute 5 year Winter I+20%	32.660	32.469	-0.099	0.000	0.23	3.286	0.2	39.6	FLOOD RISK
ML4- 27.000	ML4-93	15 minute 5 year Winter I+20%	32.624	31.191	-0.152	0.000	0.22	0.059	0.8	8.8	OK
ML4- 26.002	ML4-94	15 minute 5 year Winter I+20%	32.236	30.713	-0.080	0.000	0.73	0.346	1.8	48.4	OK
ML4- 24.002	ML4-95	15 minute 5 year Winter I+20%	31.795	28.592	-0.133	0.000	0.35	0.076	5.5	83.6	OK
ML4- 1.027	ML4-96	30 minute 5 year Winter I+20%	23.816	22.429	-0.471	0.000	0.46	3.150	2.1	635.6	OK
ML4- 1.028	ML4-97	30 minute 5 year Winter I+20%	23.120	22.141	-0.362	0.000	0.67	13.593	1.6	637.2	OK
ML4- 1.029	ML4-FB	30 minute 5 year Winter I+20%	23.000	21.943	-0.457	0.000	0.49	257.746	1.8	572.3	OK
ML4- 1.030	ML4-IB	10080 minute 5 year Winter I+20%	23.000	21.453	-1.447	0.000	0.00	3036.121	0.0	0.0	OK
ML4- 28.000	ML4-98	15 minute 5 year Summer I+20%	23.000	22.790	-0.210	0.000	0.00	0.000	0.0	0.0	OK

10 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

Simulation Criteria

Areal Reduction Factor 1.000 | Manhole Headloss Coeff (Global) 0.500 | MADD Factor * 10m³/ha Storage 0.000
Hot Start (mins) 0 | Foul Sewage per hectare (l/s) 0.000 | Inlet Coeffiecient 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 12 | Number of Time/Area Diagrams 0
Number of Online Controls 1 | Number of Storage Structures 2 | Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH | Data Type Catchment
FEH Rainfall Version 2013 | Cv (Summer) 0.750
Site Location GB 610500 313350 TG 10500 13350 | Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 | DTS Status OFF | Inertia Status ON
Analysis Timestep Fine | DVD 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): 5, 10, 30, 100
Climate Change (%): 20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.000	ML4-1	15 minute 10 year Winter I+40%	55.041	54.884	-0.065	0.000	0.36	0.000	0.2	39.7	FLOOD RISK
ML4- 1.001	ML4-2	15 minute 10 year Winter I+40%	54.790	54.716	-0.074	0.000	0.36	6.569	0.3	72.0	FLOOD RISK
ML4- 1.002	ML4-3	15 minute 10 year Winter I+40%	54.272	53.328	0.256	0.000	1.97	0.841	1.8	72.5	SURCHARGED
ML4- 2.000	ML4-4	15 minute 10 year Winter I+40%	54.949	54.889	-0.060	0.000	0.38	0.000	0.2	43.0	FLOOD RISK
ML4- 2.001	ML4-5	15 minute 10 year Winter I+40%	54.787	54.702	-0.085	0.000	0.31	4.838	0.2	48.1	FLOOD RISK
ML4- 2.002	ML4-6	15 minute 10 year Winter I+40%	54.472	53.187	-0.085	0.000	0.71	0.239	1.8	48.0	OK
ML4- 1.003	ML4-7	15 minute 10 year Winter I+40%	54.770	52.889	-0.092	0.000	0.92	0.714	1.3	119.0	OK
ML4- 1.004	ML4-8	15 minute 10 year Winter I+40%	54.298	52.559	-0.182	0.000	0.52	1.233	2.1	117.4	OK
ML4- 3.000	ML4-9	15 minute 10 year Winter I+40%	53.187	52.014	0.052	0.000	0.87	0.077	1.7	54.7	SURCHARGED
ML4- 3.001	ML4-10	15 minute 10 year Winter I+40%	52.912	51.809	0.107	0.000	1.50	0.763	1.4	55.0	SURCHARGED
ML4- 1.005	ML4-11	15 minute 10 year Winter I+40%	53.229	51.445	-0.170	0.000	0.58	0.729	2.2	137.2	OK
ML4- 4.000	ML4-12	15 minute 10 year Winter I+40%	51.948	50.625	-0.099	0.000	0.60	0.034	1.0	22.2	OK
ML4- 5.000	ML4-13	15 minute 10 year Winter I+40%	52.070	50.753	-0.117	0.000	0.46	0.029	1.6	29.6	OK
ML4- 1.006	ML4-14	15 minute 10 year Winter I+40%	52.178	50.480	-0.147	0.000	0.67	0.906	2.4	164.9	OK
ML4- 6.000	ML4-15	15 minute 10 year Winter I+40%	54.260	54.150	-0.110	0.000	0.19	0.000	0.3	47.5	FLOOD RISK
ML4- 6.001	ML4-16	15 minute 10 year Winter I+40%	54.103	54.008	-0.095	0.000	0.26	0.674	0.3	47.2	FLOOD RISK
ML4- 6.002	ML4-17	15 minute 10 year Winter I+40%	53.971	53.862	-0.109	0.000	0.20	1.058	0.3	46.6	FLOOD RISK
ML4- 6.003	ML4-18	15 minute 10 year Winter I+40%	53.900	53.797	-0.103	0.000	0.22	0.634	0.3	46.8	FLOOD RISK
ML4- 6.004	ML4-19	15 minute 10 year Winter I+40%	53.739	53.664	-0.075	0.000	0.30	1.743	0.4	85.9	FLOOD RISK
ML4- 6.005	ML4-20	15 minute 10 year Winter I+40%	52.181	52.115	-0.066	0.000	0.39	1.134	0.5	133.3	FLOOD RISK
ML4- 6.006	ML4-21	15 minute 10 year Winter I+40%	49.992	49.029	-0.251	0.000	0.54	0.476	1.2	133.6	OK
ML4- 7.000	ML4-22	15 minute 10 year Winter I+40%	54.472	54.340	-0.132	0.000	0.09	0.000	0.3	25.7	FLOOD RISK
ML4- 7.001	ML4-23	15 minute 10 year Winter I+40%	52.931	52.808	-0.123	0.000	0.14	0.404	0.4	44.7	FLOOD RISK
ML4- 7.002	ML4-24	15 minute 10 year Winter I+40%	52.720	52.597	-0.123	0.000	0.14	0.305	0.4	43.0	FLOOD RISK
ML4- 7.003	ML4-25	15 minute 10 year Winter I+40%	51.980	51.862	-0.118	0.000	0.17	0.342	0.3	43.0	FLOOD RISK
ML4- 7.004	ML4-26	15 minute 10 year Winter I+40%	51.844	51.731	-0.113	0.000	0.18	0.509	0.4	60.9	FLOOD RISK
ML4- 7.005	ML4-27	15 minute 10 year Winter I+40%	50.072	49.203	-0.090	0.000	0.81	0.363	1.2	60.6	OK
ML4- 1.007	ML4-29	15 minute 10 year Winter I+40%	50.398	48.942	-0.256	0.000	0.52	1.495	3.2	358.8	OK
ML4- 8.000	ML4-30	15 minute 10 year Winter I+40%	49.481	48.256	0.000	0.000	1.04	0.083	0.9	60.1	OK
ML4- 1.008	ML4-31	15 minute 10 year Winter I+40%	49.589	47.981	-0.231	0.000	0.59	1.105	3.2	389.0	OK
ML4- 1.009	ML4-32	15 minute 10 year Winter I+40%	47.378	45.937	-0.240	0.000	0.57	1.187	3.2	386.4	OK
ML4- 1.010	ML4-33	15 minute 10 year Winter I+40%	45.399	43.958	-0.240	0.000	0.57	1.132	3.2	385.0	OK
ML4- 9.000	ML4-34	15 minute 10 year Winter I+40%	49.970	49.847	-0.123	0.000	0.12	0.000	0.4	44.8	FLOOD RISK
ML4- 9.001	ML4-35	15 minute 10 year Winter I+40%	47.922	47.833	-0.089	0.000	0.24	0.417	0.5	85.4	FLOOD RISK
ML4- 9.002	ML4-36	15 minute 10 year Winter I+40%	45.527	45.456	-0.071	0.000	0.37	0.661	0.6	133.1	FLOOD RISK
ML4- 9.003	ML4-37	15 minute 10 year Winter I+40%	43.131	42.258	-0.148	0.000	0.78	0.525	1.2	132.6	OK
ML4- 10.000	ML4-38	15 minute 10 year Winter I+40%	50.045	49.918	-0.127	0.000	0.11	0.000	0.4	40.4	FLOOD RISK
ML4- 10.001	ML4-39	15 minute 10 year Winter I+40%	47.905	47.816	-0.089	0.000	0.23	0.414	0.5	84.7	FLOOD RISK
ML4- 10.002	ML4-40	15 minute 10 year Winter I+40%	45.551	45.485	-0.066	0.000	0.39	0.723	0.6	141.0	FLOOD RISK
ML4- 10.003	ML4-41	15 minute 10 year Winter I+40%	43.238	42.267	-0.134	0.000	0.83	0.550	1.2	141.0	OK
ML4- 1.011	ML4-42	15 minute 10 year Winter I+40%	43.523	42.081	-0.241	0.000	0.67	2.353	3.6	637.9	OK
ML4- 1.012	ML4-43	15 minute 10 year Winter I+40%	41.457	40.019	-0.237	0.000	0.67	1.858	3.6	638.7	OK
ML4- 1.013	ML4-44	15 minute 10 year Winter I+40%	39.554	38.092	-0.262	0.000	0.60	1.890	3.9	631.4	OK
ML4- 11.000	ML4-45	15 minute 10 year Winter I+40%	43.223	43.101	-0.122	0.000	0.13	0.000	0.5	47.8	FLOOD RISK
ML4- 11.001	ML4-46	15 minute 10 year Winter I+40%	41.114	41.028	-0.086	0.000	0.25	0.428	0.5	89.0	FLOOD RISK
ML4- 11.002	ML4-47	15 minute 10 year Winter I+40%	39.094	39.021	-0.073	0.000	0.36	0.671	0.6	132.7	FLOOD RISK
ML4- 12.000	ML4-48	15 minute 10 year Winter I+40%	40.491	40.218	-0.273	0.000	0.17	0.000	0.3	35.3	FLOOD RISK
ML4- 12.001	ML4-49	15 minute 10 year Winter I+40%	39.710	36.026	0.101	0.000	0.50	0.648	1.8	35.7	SURCHARGED
ML4- 11.003	ML4-50	15 minute 10 year Winter I+40%	37.139	35.998	-0.152	0.000	0.19	1.905	1.4	156.9	OK
ML4- 1.014	ML4-51	15 minute 10 year Winter I+40%	37.517	35.961	0.085	0.000	1.26	10.246	1.7	764.5	SURCHARGED
ML4- 13.000	ML4-52	15 minute 10 year Winter I+40%	43.108	42.981	-0.127	0.000	0.11	0.000	0.4	41.6	FLOOD RISK
ML4- 13.001	ML4-53	15 minute 10 year Winter I+40%	41.089	40.992	-0.097	0.000	0.21	0.322	0.5	76.2	FLOOD RISK
ML4- 13.002	ML4-54	15 minute 10 year Winter I+40%	39.040	38.961	-0.079	0.000	0.33	0.552	0.5	118.3	FLOOD RISK
ML4- 1.015	ML4-55	15 minute 10 year Winter I+40%	37.121	35.479	-0.276	0.000	0.72	3.626	2.9	850.9	OK
ML4- 14.000	ML4-56	15 minute 10 year Winter I+40%	37.167	37.013	-0.069	0.000	0.20	0.000	1.0	31.1	FLOOD RISK
ML4- 1.016	ML4-57	15 minute 10 year Winter I+40%	36.318	34.802	-0.229	0.000	0.81	7.221	2.7	850.1	OK

10 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.017	ML4-58	15 minute 10 year Winter I+40%	35.369	33.739	-0.249	0.000	0.78	7.536	2.7	849.6	OK
ML4- 15.000	ML4-59	15 minute 10 year Winter I+40%	34.734	33.316	-0.060	0.000	0.88	0.045	2.0	60.6	OK
ML4- 1.018	ML4-60	15 minute 10 year Winter I+40%	34.583	32.923	-0.214	0.000	0.85	7.784	2.5	849.7	OK
ML4- 16.000	ML4-61	15 minute 10 year Winter I+40%	33.927	32.595	-0.132	0.000	0.35	0.025	2.0	30.6	OK
ML4- 17.000	ML4-62	15 minute 10 year Winter I+40%	33.838	32.477	-0.135	0.000	0.34	0.024	1.7	24.4	OK
ML4- 1.019	ML4-63	15 minute 10 year Winter I+40%	33.779	32.070	-0.279	0.000	0.77	7.294	2.3	851.9	OK
ML4- 1.020	ML4-64	15 minute 10 year Winter I+40%	33.270	31.616	-0.283	0.000	0.76	12.081	2.3	851.7	OK
ML4- 18.000	ML4-65	15 minute 10 year Winter I+40%	32.809	31.547	-0.062	0.000	0.87	0.045	1.7	50.6	OK
ML4- 1.021	ML4-66	15 minute 10 year Winter I+40%	32.630	31.184	-0.254	0.000	0.82	12.650	2.2	850.1	OK
ML4- 1.022	ML4-67	15 minute 10 year Winter I+40%	32.327	30.800	-0.335	0.000	0.65	6.946	2.6	849.1	OK
ML4- 1.023	ML4-68	15 minute 10 year Winter I+40%	31.390	29.717	-0.429	0.000	0.46	5.104	3.4	850.3	OK
ML4- 19.000	ML4-69	15 minute 10 year Winter I+40%	32.138	30.721	-0.176	0.000	0.11	0.013	1.5	9.4	OK
ML4- 20.000	ML4-70	15 minute 10 year Winter I+40%	31.751	30.365	-0.149	0.000	0.24	0.020	1.5	17.9	OK
ML4- 19.001	ML4-71	15 minute 10 year Winter I+40%	31.537	30.163	-0.082	0.000	0.69	0.184	1.1	26.6	OK
ML4- 19.002	ML4-72	15 minute 10 year Winter I+40%	31.159	29.709	-0.126	0.000	0.40	0.169	1.6	27.3	OK
ML4- 21.000	ML4-73	15 minute 10 year Winter I+40%	31.685	31.413	-0.181	0.000	0.02	0.000	1.4	25.9	FLOOD RISK
ML4- 21.001	ML4-74	15 minute 10 year Winter I+40%	31.199	30.955	-0.172	0.000	0.04	0.194	1.7	58.9	FLOOD RISK
ML4- 22.000	ML4-75	15 minute 10 year Winter I+40%	32.211	32.072	-0.042	0.000	0.42	0.000	0.9	50.6	FLOOD RISK
ML4- 22.001	ML4-76	15 minute 10 year Winter I+40%	31.145	29.811	-0.134	0.000	0.34	0.096	3.4	51.0	OK
ML4- 23.000	ML4-77	15 minute 10 year Winter I+40%	36.351	36.082	-0.180	0.000	0.02	0.000	1.4	29.4	FLOOD RISK
ML4- 23.001	ML4-78	15 minute 10 year Winter I+40%	35.509	35.203	-0.124	0.000	0.12	0.614	0.3	32.1	OK
ML4- 23.002	ML4-79	15 minute 10 year Winter I+40%	34.783	34.419	-0.118	0.000	0.14	0.502	0.3	37.5	OK
ML4- 23.003	ML4-80	15 minute 10 year Winter I+40%	33.610	33.501	-0.109	0.000	0.19	0.548	0.3	35.2	FLOOD RISK
ML4- 23.004	ML4-81	15 minute 10 year Winter I+40%	33.432	33.139	-0.123	0.000	0.14	0.850	0.3	34.5	FLOOD RISK
ML4- 23.005	ML4-82	15 minute 10 year Winter I+40%	32.681	32.544	-0.120	0.000	0.15	0.515	0.3	39.1	FLOOD RISK
ML4- 23.006	ML4-83	15 minute 10 year Winter I+40%	32.326	32.257	-0.078	0.000	0.28	1.194	0.4	69.1	FLOOD RISK*
ML4- 23.007	ML4-84	15 minute 10 year Winter I+40%	31.382	31.267	-0.067	0.000	0.39	1.594	0.4	98.2	FLOOD RISK
ML4- 1.024	ML4-85	30 minute 10 year Winter I+40%	30.545	28.067	-0.432	0.000	0.46	2.959	3.6	896.1	OK
ML4- 1.025	ML4-86	30 minute 10 year Winter I+40%	28.313	26.694	-0.536	0.000	0.27	1.665	5.4	895.3	OK
ML4- 1.026	ML4-87	30 minute 10 year Winter I+40%	24.304	23.011	0.061	0.000	1.17	5.777	1.7	901.3	SURCHARGED
ML4- 24.000	ML4-88	15 minute 10 year Winter I+40%	32.382	32.204	-0.087	0.000	0.26	0.000	0.2	29.2	FLOOD RISK
ML4- 24.001	ML4-89	15 minute 10 year Winter I+40%	32.198	32.016	-0.097	0.000	0.24	3.275	0.3	47.3	FLOOD RISK
ML4- 25.000	ML4-90	15 minute 10 year Winter I+40%	32.194	30.751	-0.151	0.000	0.24	0.060	0.8	9.5	OK
ML4- 26.000	ML4-91	15 minute 10 year Winter I+40%	32.829	32.670	-0.071	0.000	0.33	0.000	0.2	36.8	FLOOD RISK
ML4- 26.001	ML4-92	15 minute 10 year Winter I+40%	32.660	32.491	-0.077	0.000	0.34	5.985	0.3	57.2	FLOOD RISK
ML4- 27.000	ML4-93	15 minute 10 year Winter I+40%	32.624	31.205	-0.138	0.000	0.31	0.071	0.9	12.4	OK
ML4- 26.002	ML4-94	15 minute 10 year Winter I+40%	32.236	30.811	0.018	0.000	1.03	0.823	1.9	67.9	SURCHARGED
ML4- 24.002	ML4-95	15 minute 10 year Winter I+40%	31.795	28.614	-0.111	0.000	0.51	0.095	6.0	121.3	OK
ML4- 1.027	ML4-96	30 minute 10 year Winter I+40%	23.816	22.546	-0.354	0.000	0.68	4.391	2.3	938.5	OK
ML4- 1.028	ML4-97	30 minute 10 year Winter I+40%	23.120	22.314	-0.189	0.000	0.98	22.307	1.7	940.1	OK
ML4- 1.029	ML4-FB	30 minute 10 year Winter I+40%	23.000	22.074	-0.326	0.000	0.73	345.316	2.0	859.4	OK
ML4- 1.030	ML4-IB	10080 minute 10 year Winter I+40%	23.000	21.640	-1.260	0.000	0.00	4356.935	0.0	0.0	OK
ML4- 28.000	ML4-98	15 minute 10 year Summer I+40%	23.000	22.790	-0.210	0.000	0.00	0.000	0.0	0.0	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	12	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 10, 30, 100
Climate Change (%)	20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.000	ML4-1	15 minute 30 year Winter I+40%	55.041	54.902	-0.047	0.000	0.48	0.000	0.2	52.9	FLOOD RISK
ML4- 1.001	ML4-2	15 minute 30 year Winter I+40%	54.790	54.737	-0.053	0.000	0.48	9.549	0.3	96.0	FLOOD RISK
ML4- 1.002	ML4-3	15 minute 30 year Winter I+40%	54.272	53.655	0.583	0.000	2.59	1.418	2.4	95.3	SURCHARGED
ML4- 2.000	ML4-4	15 minute 30 year Winter I+40%	54.949	54.907	-0.042	0.000	0.51	0.000	0.2	57.3	FLOOD RISK
ML4- 2.001	ML4-5	15 minute 30 year Winter I+40%	54.787	54.719	-0.068	0.000	0.39	7.211	0.2	61.0	FLOOD RISK
ML4- 2.002	ML4-6	15 minute 30 year Winter I+40%	54.472	53.296	0.024	0.000	0.90	0.431	1.9	61.4	SURCHARGED
ML4- 1.003	ML4-7	15 minute 30 year Winter I+40%	54.770	53.065	0.084	0.000	1.17	1.537	1.4	152.7	SURCHARGED
ML4- 1.004	ML4-8	15 minute 30 year Winter I+40%	54.298	52.593	-0.148	0.000	0.67	1.709	2.2	151.0	OK
ML4- 3.000	ML4-9	15 minute 30 year Winter I+40%	53.187	52.331	0.369	0.000	1.16	0.166	1.9	72.5	SURCHARGED
ML4- 3.001	ML4-10	15 minute 30 year Winter I+40%	52.912	51.966	0.264	0.000	1.99	1.049	1.8	73.1	SURCHARGED
ML4- 1.005	ML4-11	15 minute 30 year Winter I+40%	53.229	51.476	-0.139	0.000	0.72	1.020	2.3	171.0	OK
ML4- 4.000	ML4-12	15 minute 30 year Winter I+40%	51.948	50.653	-0.071	0.000	0.80	0.042	1.0	29.6	OK
ML4- 5.000	ML4-13	15 minute 30 year Winter I+40%	52.070	50.773	-0.097	0.000	0.61	0.035	1.7	39.4	OK
ML4- 1.006	ML4-14	15 minute 30 year Winter I+40%	52.178	50.525	-0.102	0.000	0.86	1.328	2.5	212.8	OK
ML4- 6.000	ML4-15	15 minute 30 year Winter I+40%	54.260	54.165	-0.095	0.000	0.25	0.000	0.4	63.3	FLOOD RISK
ML4- 6.001	ML4-16	15 minute 30 year Winter I+40%	54.103	54.025	-0.078	0.000	0.34	1.135	0.3	62.1	FLOOD RISK
ML4- 6.002	ML4-17	15 minute 30 year Winter I+40%	53.971	53.877	-0.094	0.000	0.27	1.285	0.3	62.0	FLOOD RISK
ML4- 6.003	ML4-18	15 minute 30 year Winter I+40%	53.900	53.812	-0.088	0.000	0.29	0.821	0.3	60.8	FLOOD RISK
ML4- 6.004	ML4-19	15 minute 30 year Winter I+40%	53.739	53.685	-0.054	0.000	0.39	2.558	0.5	112.9	FLOOD RISK
ML4- 6.005	ML4-20	15 minute 30 year Winter I+40%	52.181	52.134	-0.047	0.000	0.52	1.546	0.6	177.9	FLOOD RISK
ML4- 6.006	ML4-21	15 minute 30 year Winter I+40%	49.992	49.085	-0.195	0.000	0.71	0.575	1.2	177.0	OK
ML4- 7.000	ML4-22	15 minute 30 year Winter I+40%	54.472	54.351	-0.121	0.000	0.12	0.000	0.3	34.2	FLOOD RISK
ML4- 7.001	ML4-23	15 minute 30 year Winter I+40%	52.931	52.822	-0.109	0.000	0.19	0.479	0.4	59.5	FLOOD RISK
ML4- 7.002	ML4-24	15 minute 30 year Winter I+40%	52.720	52.610	-0.110	0.000	0.18	0.361	0.4	57.2	FLOOD RISK
ML4- 7.003	ML4-25	15 minute 30 year Winter I+40%	51.980	51.877	-0.103	0.000	0.22	0.407	0.4	57.3	FLOOD RISK
ML4- 7.004	ML4-26	15 minute 30 year Winter I+40%	51.844	51.746	-0.098	0.000	0.24	0.604	0.5	81.2	FLOOD RISK
ML4- 7.005	ML4-27	15 minute 30 year Winter I+40%	50.072	49.306	0.013	0.000	1.08	0.545	1.2	80.8	SURCHARGED
ML4- 1.007	ML4-29	15 minute 30 year Winter I+40%	50.398	48.992	-0.206	0.000	0.68	2.011	3.4	468.9	OK
ML4- 8.000	ML4-30	15 minute 30 year Winter I+40%	49.481	48.301	0.045	0.000	1.38	0.096	1.2	80.1	SURCHARGED
ML4- 1.008	ML4-31	15 minute 30 year Winter I+40%	49.589	48.041	-0.171	0.000	0.78	1.636	3.3	511.2	OK
ML4- 1.009	ML4-32	15 minute 30 year Winter I+40%	47.378	45.994	-0.183	0.000	0.75	1.657	3.4	508.5	OK
ML4- 1.010	ML4-33	15 minute 30 year Winter I+40%	45.399	44.015	-0.183	0.000	0.75	1.569	3.4	506.0	OK
ML4- 9.000	ML4-34	15 minute 30 year Winter I+40%	49.970	49.860	-0.110	0.000	0.16	0.000	0.5	59.7	FLOOD RISK
ML4- 9.001	ML4-35	15 minute 30 year Winter I+40%	47.922	47.853	-0.069	0.000	0.31	0.688	0.6	113.8	FLOOD RISK
ML4- 9.002	ML4-36	15 minute 30 year Winter I+40%	45.527	45.476	-0.051	0.000	0.49	0.940	0.6	177.1	FLOOD RISK
ML4- 9.003	ML4-37	15 minute 30 year Winter I+40%	43.131	42.406	0.000	0.000	1.04	0.786	1.2	175.4	OK
ML4- 10.000	ML4-38	15 minute 30 year Winter I+40%	50.045	49.931	-0.114	0.000	0.15	0.000	0.5	53.8	FLOOD RISK
ML4- 10.001	ML4-39	15 minute 30 year Winter I+40%	47.905	47.835	-0.070	0.000	0.31	0.687	0.6	113.0	FLOOD RISK
ML4- 10.002	ML4-40	15 minute 30 year Winter I+40%	45.551	45.504	-0.047	0.000	0.52	0.986	0.6	187.5	FLOOD RISK
ML4- 10.003	ML4-41	15 minute 30 year Summer I+40%	43.238	42.422	0.021	0.000	1.07	0.824	1.2	180.3	SURCHARGED
ML4- 1.011	ML4-42	15 minute 30 year Winter I+40%	43.523	42.161	-0.161	0.000	0.88	3.699	3.8	844.6	OK
ML4- 1.012	ML4-43	15 minute 30 year Winter I+40%	41.457	40.098	-0.158	0.000	0.89	2.686	3.8	844.4	OK
ML4- 1.013	ML4-44	15 minute 30 year Winter I+40%	39.554	38.164	-0.190	0.000	0.80	2.622	4.1	836.3	OK
ML4- 11.000	ML4-45	15 minute 30 year Winter I+40%	43.223	43.114	-0.109	0.000	0.17	0.000	0.5	63.6	FLOOD RISK
ML4- 11.001	ML4-46	15 minute 30 year Winter I+40%	41.114	41.048	-0.066	0.000	0.34	0.695	0.6	118.5	FLOOD RISK
ML4- 11.002	ML4-47	15 minute 30 year Winter I+40%	39.094	39.041	-0.053	0.000	0.48	0.969	0.6	176.5	FLOOD RISK
ML4- 12.000	ML4-48	15 minute 30 year Winter I+40%	40.491	40.249	-0.242	0.000	0.23	0.000	0.4	47.0	FLOOD RISK
ML4- 12.001	ML4-49	15 minute 30 year Winter I+40%	39.710	36.368	0.443	0.000	0.63	1.338	1.8	44.7	SURCHARGED
ML4- 11.003	ML4-50	15 minute 30 year Winter I+40%	37.139	36.308	0.158	0.000	0.25	2.696	1.4	202.5	SURCHARGED
ML4- 1.014	ML4-51	15 minute 30 year Winter I+40%	37.517	36.138	0.262	0.000	1.66	12.823	2.3	1006.8	SURCHARGED
ML4- 13.000	ML4-52	15 minute 30 year Winter I+40%	43.108	42.994	-0.114	0.000	0.15	0.000	0.5	55.4	FLOOD RISK
ML4- 13.001	ML4-53	15 minute 30 year Winter I+40%	41.089	41.009	-0.080	0.000	0.28	0.539	0.5	101.7	FLOOD RISK
ML4- 13.002	ML4-54	15 minute 30 year Winter I+40%	39.040	38.982	-0.058	0.000	0.44	0.849	0.6	157.3	FLOOD RISK
ML4- 1.015	ML4-55	15 minute 30 year Winter I+40%	37.121	35.706	-0.049	0.000	0.94	5.792	3.1	1116.3	OK
ML4- 14.000	ML4-56	15 minute 30 year Winter I+40%	37.167	37.023	-0.059	0.000	0.26	0.000	1.0	41.4	FLOOD RISK
ML4- 1.016	ML4-57	15 minute 30 year Winter I+40%	36.318	35.100	0.069	0.000	1.04	17.335	2.7	1096.4	SURCHARGED

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.017	ML4-58	15 minute 30 year Winter I+40%	35.369	33.984	-0.004	0.000	0.97	16.900	2.8	1056.7	OK
ML4- 15.000	ML4-59	15 minute 30 year Winter I+40%	34.734	33.461	0.085	0.000	1.17	0.086	2.1	80.4	SURCHARGED
ML4- 1.018	ML4-60	15 minute 30 year Winter I+40%	34.583	33.193	0.056	0.000	1.05	17.333	2.6	1053.3	SURCHARGED
ML4- 16.000	ML4-61	15 minute 30 year Winter I+40%	33.927	32.611	-0.116	0.000	0.47	0.029	2.2	40.7	OK
ML4- 17.000	ML4-62	15 minute 30 year Winter I+40%	33.838	32.493	-0.119	0.000	0.45	0.029	1.8	32.5	OK
ML4- 1.019	ML4-63	15 minute 30 year Winter I+40%	33.779	32.160	-0.189	0.000	0.95	10.378	2.4	1054.5	OK
ML4- 1.020	ML4-64	30 minute 30 year Winter I+40%	33.270	31.723	-0.176	0.000	0.93	16.868	2.4	1046.4	OK
ML4- 18.000	ML4-65	15 minute 30 year Winter I+40%	32.809	31.659	0.050	0.000	1.15	0.076	1.7	67.2	SURCHARGED
ML4- 1.021	ML4-66	30 minute 30 year Winter I+40%	32.630	31.338	-0.100	0.000	1.00	19.396	2.3	1042.8	OK
ML4- 1.022	ML4-67	30 minute 30 year Winter I+40%	32.327	30.873	-0.262	0.000	0.81	8.777	2.7	1047.8	OK
ML4- 1.023	ML4-68	30 minute 30 year Winter I+40%	31.390	29.770	-0.376	0.000	0.58	6.750	3.5	1054.9	OK
ML4- 19.000	ML4-69	15 minute 30 year Winter I+40%	32.138	30.729	-0.168	0.000	0.14	0.015	1.6	12.5	OK
ML4- 20.000	ML4-70	15 minute 30 year Winter I+40%	31.751	30.378	-0.136	0.000	0.33	0.024	1.7	23.8	OK
ML4- 19.001	ML4-71	15 minute 30 year Winter I+40%	31.537	30.195	-0.050	0.000	0.92	0.246	1.1	35.4	OK
ML4- 19.002	ML4-72	15 minute 30 year Winter I+40%	31.159	29.728	-0.107	0.000	0.54	0.236	1.7	36.4	OK
ML4- 21.000	ML4-73	15 minute 30 year Winter I+40%	31.685	31.417	-0.177	0.000	0.03	0.000	1.4	34.6	FLOOD RISK
ML4- 21.001	ML4-74	15 minute 30 year Winter I+40%	31.199	30.960	-0.167	0.000	0.05	0.237	1.9	78.4	FLOOD RISK
ML4- 22.000	ML4-75	15 minute 30 year Winter I+40%	32.211	32.085	-0.029	0.000	0.55	0.000	0.9	67.3	FLOOD RISK
ML4- 22.001	ML4-76	15 minute 30 year Winter I+40%	31.145	29.827	-0.118	0.000	0.45	0.113	3.7	67.9	OK
ML4- 23.000	ML4-77	15 minute 30 year Winter I+40%	36.351	36.085	-0.177	0.000	0.02	0.000	1.5	39.2	FLOOD RISK
ML4- 23.001	ML4-78	15 minute 30 year Winter I+40%	35.509	35.215	-0.112	0.000	0.17	0.726	0.3	42.8	FLOOD RISK*
ML4- 23.002	ML4-79	15 minute 30 year Winter I+40%	34.783	34.434	-0.103	0.000	0.19	0.598	0.4	50.1	OK
ML4- 23.003	ML4-80	15 minute 30 year Winter I+40%	33.610	33.516	-0.094	0.000	0.25	0.661	0.3	47.0	FLOOD RISK
ML4- 23.004	ML4-81	15 minute 30 year Winter I+40%	33.432	33.152	-0.110	0.000	0.19	1.009	0.3	46.2	FLOOD RISK
ML4- 23.005	ML4-82	15 minute 30 year Winter I+40%	32.681	32.558	-0.106	0.000	0.20	0.614	0.4	52.4	FLOOD RISK
ML4- 23.006	ML4-83	15 minute 30 year Winter I+40%	32.326	32.279	-0.056	0.000	0.38	1.809	0.4	92.4	FLOOD RISK*
ML4- 23.007	ML4-84	15 minute 30 year Winter I+40%	31.382	31.287	-0.047	0.000	0.53	2.226	0.4	132.8	FLOOD RISK
ML4- 1.024	ML4-85	30 minute 30 year Winter I+40%	30.545	28.132	-0.367	0.000	0.59	4.006	3.8	1152.9	OK
ML4- 1.025	ML4-86	30 minute 30 year Winter I+40%	28.313	26.738	-0.492	0.000	0.34	2.174	5.7	1151.8	OK
ML4- 1.026	ML4-87	30 minute 30 year Winter I+40%	24.304	23.343	0.393	0.000	1.51	9.602	2.2	1161.1	SURCHARGED
ML4- 24.000	ML4-88	15 minute 30 year Winter I+40%	32.382	32.224	-0.067	0.000	0.34	0.000	0.2	38.9	FLOOD RISK
ML4- 24.001	ML4-89	15 minute 30 year Winter I+40%	32.198	32.028	-0.085	0.000	0.30	4.777	0.3	59.1	FLOOD RISK
ML4- 25.000	ML4-90	15 minute 30 year Winter I+40%	32.194	30.759	-0.143	0.000	0.29	0.067	0.9	11.4	OK
ML4- 26.000	ML4-91	15 minute 30 year Winter I+40%	32.829	32.690	-0.051	0.000	0.44	0.000	0.2	49.0	FLOOD RISK
ML4- 26.001	ML4-92	15 minute 30 year Winter I+40%	32.660	32.511	-0.057	0.000	0.45	8.961	0.3	75.4	FLOOD RISK
ML4- 27.000	ML4-93	15 minute 30 year Winter I+40%	32.624	31.217	-0.126	0.000	0.39	0.082	1.0	15.6	OK
ML4- 26.002	ML4-94	15 minute 30 year Winter I+40%	32.236	31.088	0.295	0.000	1.33	2.415	2.2	87.7	SURCHARGED
ML4- 24.002	ML4-95	15 minute 30 year Winter I+40%	31.795	28.631	-0.094	0.000	0.64	0.109	6.4	153.4	OK
ML4- 1.027	ML4-96	30 minute 30 year Winter I+40%	23.816	22.966	0.066	0.000	0.89	7.739	2.4	1225.5	SURCHARGED
ML4- 1.028	ML4-97	30 minute 30 year Winter I+40%	23.120	22.653	0.150	0.000	1.28	35.679	1.9	1228.5	SURCHARGED
ML4- 1.029	ML4-FB	30 minute 30 year Winter I+40%	23.000	22.195	-0.205	0.000	0.95	430.336	2.1	1119.0	OK
ML4- 1.030	ML4-IB	10080 minute 30 year Winter I+40%	23.000	21.801	-1.099	0.000	0.00	5533.310	0.0	0.0	OK
ML4- 28.000	ML4-98	15 minute 30 year Summer I+40%	23.000	22.790	-0.210	0.000	0.00	0.000	0.0	0.0	OK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 12 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Catchment
FEH Rainfall Version 2013 Cv (Summer) 0.750
Site Location GB 610500 313350 TG 10500 13350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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) 5, 10, 30, 100
Climate Change (%) 20, 40, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.000	ML4-1	15 minute 100 year Winter I+45%	55.041	54.925	-0.024	0.000	0.64	0.000	0.2	71.4	FLOOD RISK
ML4- 1.001	ML4-2	15 minute 100 year Winter I+45%	54.790	54.760	-0.030	0.000	0.66	12.873	0.4	131.8	FLOOD RISK
ML4- 1.002	ML4-3	15 minute 100 year Winter I+45%	54.272	54.135	1.063	0.000	3.13	3.926	2.9	115.3	FLOOD RISK
ML4- 2.000	ML4-4	15 minute 100 year Winter I+45%	54.949	54.930	-0.019	0.000	0.69	0.000	0.2	77.3	FLOOD RISK
ML4- 2.001	ML4-5	15 minute 100 year Winter I+45%	54.787	54.741	-0.046	0.000	0.54	10.299	0.3	84.4	FLOOD RISK
ML4- 2.002	ML4-6	15 minute 100 year Winter I+45%	54.472	53.712	0.440	0.000	1.24	1.167	2.1	84.2	SURCHARGED
ML4- 1.003	ML4-7	15 minute 100 year Winter I+45%	54.770	53.273	0.292	0.000	1.51	2.073	1.8	195.9	SURCHARGED
ML4- 1.004	ML4-8	15 minute 100 year Winter I+45%	54.298	52.636	-0.105	0.000	0.86	2.414	2.3	194.3	OK
ML4- 3.000	ML4-9	15 minute 100 year Winter I+45%	53.187	52.915	0.953	0.000	1.56	0.332	2.5	97.3	FLOOD RISK
ML4- 3.001	ML4-10	15 minute 100 year Winter I+45%	52.912	52.253	0.551	0.000	2.68	1.377	2.5	98.5	SURCHARGED
ML4- 1.005	ML4-11	15 minute 100 year Winter I+45%	53.229	51.594	-0.021	0.000	0.94	2.215	2.4	224.7	OK
ML4- 4.000	ML4-12	15 minute 100 year Winter I+45%	51.948	50.862	0.138	0.000	1.08	0.101	1.0	40.0	SURCHARGED
ML4- 5.000	ML4-13	15 minute 100 year Winter I+45%	52.070	50.917	0.047	0.000	0.83	0.076	1.8	53.2	SURCHARGED
ML4- 1.006	ML4-14	15 minute 100 year Winter I+45%	52.178	50.786	0.159	0.000	1.06	4.153	2.6	261.9	SURCHARGED
ML4- 6.000	ML4-15	15 minute 100 year Winter I+45%	54.260	54.184	-0.076	0.000	0.34	0.000	0.4	85.5	FLOOD RISK
ML4- 6.001	ML4-16	15 minute 100 year Winter I+45%	54.103	54.047	-0.056	0.000	0.46	1.758	0.3	84.3	FLOOD RISK
ML4- 6.002	ML4-17	15 minute 100 year Winter I+45%	53.971	53.895	-0.076	0.000	0.36	2.143	0.4	82.9	FLOOD RISK
ML4- 6.003	ML4-18	15 minute 100 year Winter I+45%	53.900	53.832	-0.068	0.000	0.39	1.200	0.3	81.7	FLOOD RISK
ML4- 6.004	ML4-19	15 minute 100 year Winter I+45%	53.739	53.703	-0.036	0.000	0.51	3.272	0.5	149.0	FLOOD RISK
ML4- 6.005	ML4-20	15 minute 100 year Winter I+45%	52.181	52.155	-0.026	0.000	0.70	2.020	0.6	240.1	FLOOD RISK
ML4- 6.006	ML4-21	15 minute 100 year Winter I+45%	49.992	49.164	-0.116	0.000	0.96	0.714	1.3	239.2	OK
ML4- 7.000	ML4-22	15 minute 100 year Winter I+45%	54.472	54.365	-0.107	0.000	0.17	0.000	0.4	46.2	FLOOD RISK
ML4- 7.001	ML4-23	15 minute 100 year Winter I+45%	52.931	52.837	-0.094	0.000	0.26	0.595	0.5	80.4	FLOOD RISK
ML4- 7.002	ML4-24	15 minute 100 year Winter I+45%	52.720	52.626	-0.094	0.000	0.25	0.435	0.4	77.5	FLOOD RISK
ML4- 7.003	ML4-25	15 minute 100 year Winter I+45%	51.980	51.893	-0.087	0.000	0.30	0.594	0.4	77.0	FLOOD RISK
ML4- 7.004	ML4-26	15 minute 100 year Winter I+45%	51.844	51.763	-0.081	0.000	0.32	0.959	0.5	107.9	FLOOD RISK
ML4- 7.005	ML4-27	15 minute 100 year Winter I+45%	50.072	49.389	0.096	0.000	1.43	0.691	1.5	107.2	SURCHARGED
ML4- 1.007	ML4-29	15 minute 100 year Winter I+45%	50.398	49.056	-0.142	0.000	0.88	2.898	3.6	609.4	OK
ML4- 8.000	ML4-30	15 minute 100 year Winter I+45%	49.481	48.387	0.131	0.000	1.86	0.120	1.6	108.1	SURCHARGED
ML4- 1.008	ML4-31	15 minute 100 year Winter I+45%	49.589	48.179	-0.033	0.000	1.00	3.076	3.5	654.2	OK
ML4- 1.009	ML4-32	15 minute 100 year Winter I+45%	47.378	46.192	0.015	0.000	0.95	3.776	3.6	647.5	SURCHARGED
ML4- 1.010	ML4-33	15 minute 100 year Winter I+45%	45.399	44.508	0.310	0.000	0.92	6.865	3.5	623.3	SURCHARGED
ML4- 9.000	ML4-34	15 minute 100 year Winter I+45%	49.970	49.876	-0.094	0.000	0.22	0.000	0.5	80.6	FLOOD RISK
ML4- 9.001	ML4-35	15 minute 100 year Winter I+45%	47.922	47.873	-0.049	0.000	0.42	0.974	0.6	153.2	FLOOD RISK
ML4- 9.002	ML4-36	15 minute 100 year Winter I+45%	45.527	45.497	-0.030	0.000	0.66	1.237	0.6	239.2	FLOOD RISK
ML4- 9.003	ML4-37	15 minute 100 year Winter I+45%	43.131	43.004	0.598	0.000	1.36	2.345	1.4	229.8	FLOOD RISK
ML4- 10.000	ML4-38	15 minute 100 year Winter I+45%	50.045	49.946	-0.099	0.000	0.20	0.000	0.5	72.7	FLOOD RISK
ML4- 10.001	ML4-39	15 minute 100 year Winter I+45%	47.905	47.855	-0.050	0.000	0.42	0.982	0.6	152.2	FLOOD RISK
ML4- 10.002	ML4-40	15 minute 100 year Winter I+45%	45.551	45.526	-0.025	0.000	0.70	1.296	0.7	253.2	FLOOD RISK
ML4- 10.003	ML4-41	15 minute 100 year Winter I+45%	43.238	43.012	0.611	0.000	1.45	1.987	1.5	244.6	FLOOD RISK
ML4- 1.011	ML4-42	15 minute 100 year Winter I+45%	43.523	42.901	0.579	0.000	1.07	13.396	3.8	1022.2	SURCHARGED
ML4- 1.012	ML4-43	15 minute 100 year Winter I+45%	41.457	40.852	0.596	0.000	1.01	13.198	3.8	960.9	SURCHARGED
ML4- 1.013	ML4-44	15 minute 100 year Winter I+45%	39.554	38.953	0.599	0.000	0.91	14.147	4.0	953.4	SURCHARGED
ML4- 11.000	ML4-45	15 minute 100 year Winter I+45%	43.223	43.130	-0.093	0.000	0.23	0.000	0.5	85.8	FLOOD RISK
ML4- 11.001	ML4-46	15 minute 100 year Winter I+45%	41.114	41.068	-0.046	0.000	0.45	0.958	0.6	159.6	FLOOD RISK
ML4- 11.002	ML4-47	15 minute 100 year Winter I+45%	39.094	39.062	-0.032	0.000	0.65	1.275	0.7	238.4	FLOOD RISK
ML4- 12.000	ML4-48	15 minute 100 year Winter I+45%	40.491	40.286	-0.205	0.000	0.31	0.000	0.4	63.4	FLOOD RISK
ML4- 12.001	ML4-49	30 minute 100 year Winter I+45%	39.710	37.133	1.208	0.000	0.65	2.880	1.7	46.5	SURCHARGED
ML4- 11.003	ML4-50	30 minute 100 year Winter I+45%	37.139	37.115	0.965	0.000	0.30	7.761	1.3	242.0	FLOOD RISK
ML4- 1.014	ML4-51	30 minute 100 year Winter I+45%	37.517	36.952	1.076	0.000	1.77	23.326	2.4	1076.3	SURCHARGED
ML4- 13.000	ML4-52	15 minute 100 year Winter I+45%	43.108	43.010	-0.098	0.000	0.21	0.000	0.5	74.8	FLOOD RISK
ML4- 13.001	ML4-53	15 minute 100 year Winter I+45%	41.089	41.031	-0.058	0.000	0.38	0.849	0.6	137.1	FLOOD RISK
ML4- 13.002	ML4-54	15 minute 100 year Winter I+45%	39.040	39.001	-0.039	0.000	0.59	1.117	0.6	212.0	FLOOD RISK
ML4- 1.015	ML4-55	30 minute 100 year Winter I+45%	37.121	36.490	0.735	0.000	1.05	8.333	3.1	1242.1	SURCHARGED
ML4- 14.000	ML4-56	15 minute 100 year Winter I+45%	37.167	37.034	-0.048	0.000	0.36	0.000	1.1	55.9	FLOOD RISK
ML4- 1.016	ML4-57	30 minute 100 year Winter I+45%	36.318	35.790	0.759	0.000	1.16	29.169	2.8	1223.5	SURCHARGED

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML04

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML4- 1.017	ML4-58	30 minute 100 year Winter I+45%	35.369	34.529	0.541	0.000	1.07	39.158	2.8	1170.2	SURCHARGED
ML4- 15.000	ML4-59	15 minute 100 year Winter I+45%	34.734	33.738	0.362	0.000	1.57	0.164	2.8	108.3	SURCHARGED
ML4- 1.018	ML4-60	30 minute 100 year Winter I+45%	34.583	33.585	0.448	0.000	1.17	30.049	2.7	1172.6	SURCHARGED
ML4- 16.000	ML4-61	15 minute 100 year Winter I+45%	33.927	32.633	-0.094	0.000	0.63	0.036	2.3	54.9	OK
ML4- 17.000	ML4-62	30 minute 100 year Winter I+45%	33.838	32.515	-0.097	0.000	0.47	0.035	1.8	34.2	OK
ML4- 1.019	ML4-63	30 minute 100 year Winter I+45%	33.779	32.512	0.163	0.000	1.06	25.992	2.4	1179.9	SURCHARGED
ML4- 1.020	ML4-64	30 minute 100 year Winter I+45%	33.270	32.003	0.104	0.000	1.05	28.038	2.4	1181.8	SURCHARGED
ML4- 18.000	ML4-65	15 minute 100 year Winter I+45%	32.809	31.851	0.242	0.000	1.55	0.131	2.3	90.5	SURCHARGED
ML4- 1.021	ML4-66	30 minute 100 year Winter I+45%	32.630	31.492	0.054	0.000	1.15	25.489	2.3	1194.1	SURCHARGED
ML4- 1.022	ML4-67	30 minute 100 year Winter I+45%	32.327	30.931	-0.204	0.000	0.92	10.203	2.8	1197.6	OK
ML4- 1.023	ML4-68	30 minute 100 year Winter I+45%	31.390	29.810	-0.336	0.000	0.66	8.008	3.7	1203.0	OK
ML4- 19.000	ML4-69	15 minute 100 year Winter I+45%	32.138	30.739	-0.158	0.000	0.19	0.018	1.7	16.9	OK
ML4- 20.000	ML4-70	15 minute 100 year Winter I+45%	31.751	30.517	0.003	0.000	0.43	0.063	1.8	31.5	SURCHARGED
ML4- 19.001	ML4-71	15 minute 100 year Winter I+45%	31.537	30.446	0.201	0.000	1.20	0.798	1.2	46.4	SURCHARGED
ML4- 19.002	ML4-72	15 minute 100 year Winter I+45%	31.159	29.750	-0.085	0.000	0.70	0.334	1.8	47.3	OK
ML4- 21.000	ML4-73	15 minute 100 year Winter I+45%	31.685	31.421	-0.173	0.000	0.04	0.000	1.5	46.6	FLOOD RISK
ML4- 21.001	ML4-74	15 minute 100 year Winter I+45%	31.199	30.967	-0.160	0.000	0.07	0.292	2.0	105.7	FLOOD RISK
ML4- 22.000	ML4-75	15 minute 100 year Winter I+45%	32.211	32.099	-0.015	0.000	0.75	0.000	1.0	90.8	FLOOD RISK
ML4- 22.001	ML4-76	15 minute 100 year Winter I+45%	31.145	29.848	-0.097	0.000	0.60	0.137	4.0	91.7	OK
ML4- 23.000	ML4-77	15 minute 100 year Winter I+45%	36.351	36.089	-0.173	0.000	0.03	0.000	1.6	52.8	FLOOD RISK
ML4- 23.001	ML4-78	15 minute 100 year Winter I+45%	35.509	35.231	-0.096	0.000	0.22	0.865	0.4	57.7	FLOOD RISK*
ML4- 23.002	ML4-79	15 minute 100 year Winter I+45%	34.783	34.450	-0.087	0.000	0.26	0.862	0.4	67.8	OK
ML4- 23.003	ML4-80	15 minute 100 year Winter I+45%	33.610	33.534	-0.076	0.000	0.33	1.161	0.3	63.7	FLOOD RISK
ML4- 23.004	ML4-81	15 minute 100 year Winter I+45%	33.432	33.167	-0.095	0.000	0.25	1.204	0.4	61.9	FLOOD RISK
ML4- 23.005	ML4-82	15 minute 100 year Winter I+45%	32.681	32.573	-0.091	0.000	0.27	0.817	0.4	70.3	FLOOD RISK
ML4- 23.006	ML4-83	15 minute 100 year Winter I+45%	32.326	32.300	-0.035	0.000	0.52	2.394	0.4	126.5	FLOOD RISK*
ML4- 23.007	ML4-84	15 minute 100 year Winter I+45%	31.382	31.312	-0.022	0.000	0.73	2.993	0.5	184.1	FLOOD RISK
ML4- 1.024	ML4-85	30 minute 100 year Winter I+45%	30.545	28.171	-0.328	0.000	0.67	4.668	3.9	1309.3	OK
ML4- 1.025	ML4-86	30 minute 100 year Winter I+45%	28.313	26.763	-0.467	0.000	0.39	2.489	5.9	1307.2	OK
ML4- 1.026	ML4-87	30 minute 100 year Winter I+45%	24.304	23.754	0.804	0.000	1.72	14.330	2.5	1325.3	SURCHARGED
ML4- 24.000	ML4-88	15 minute 100 year Winter I+45%	32.382	32.244	-0.047	0.000	0.46	0.000	0.2	52.5	FLOOD RISK
ML4- 24.001	ML4-89	15 minute 100 year Winter I+45%	32.198	32.047	-0.066	0.000	0.40	7.507	0.3	77.6	FLOOD RISK
ML4- 25.000	ML4-90	15 minute 100 year Winter I+45%	32.194	30.771	-0.131	0.000	0.37	0.077	0.9	14.7	OK
ML4- 26.000	ML4-91	15 minute 100 year Winter I+45%	32.829	32.711	-0.030	0.000	0.59	0.000	0.2	66.2	FLOOD RISK
ML4- 26.001	ML4-92	15 minute 100 year Winter I+45%	32.660	32.535	-0.033	0.000	0.64	12.409	0.3	107.7	FLOOD RISK
ML4- 27.000	ML4-93	15 minute 100 year Winter I+45%	32.624	31.901	0.558	0.000	0.46	0.674	1.0	18.2	SURCHARGED
ML4- 26.002	ML4-94	15 minute 100 year Winter I+45%	32.236	31.791	0.998	0.000	1.87	3.750	3.1	123.9	SURCHARGED
ML4- 24.002	ML4-95	15 minute 100 year Winter I+45%	31.795	28.667	-0.058	0.000	0.90	0.140	6.8	214.0	OK
ML4- 1.027	ML4-96	30 minute 100 year Winter I+45%	23.816	23.261	0.361	0.000	1.08	8.560	2.4	1490.7	SURCHARGED
ML4- 1.028	ML4-97	30 minute 100 year Winter I+45%	23.120	22.797	0.294	0.000	1.56	38.173	2.4	1493.2	SURCHARGED
ML4- 1.029	ML4-FB	60 minute 100 year Winter I+45%	23.000	22.393	-0.007	0.000	1.00	579.364	2.1	1173.7	OK
ML4- 1.030	ML4-IB	10080 minute 100 year Winter I+45%	23.000	22.085	-0.815	0.000	0.00	7675.888	0.0	0.0	OK
ML4- 28.000	ML4-98	15 minute 100 year Summer I+45%	23.000	22.790	-0.210	0.000	0.00	0.000	0.0	0.0	OK

Catchment 5 Basin 5 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:30 no flooding check
All pipes pass for 1:30
1:100 flooding check
The assessment* identifies that flooding resulting from 100 +CC storms will be cointained within the scheme extents.

Attenuation

100 + CC Peak Water Level: 40.593m
Cover level: 41.300m
Freeboard: achieved

*Assessment using FloodFlow has been undertaken for the 100yr Critical storms identified from the Microdrainage modelling. This analysis undertakes a more detailed assessment of flooding which considers the proposed topogragphy.

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-ML05 New

Pipe Sizes Circular Manhole Sizes Adoptable

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 610500 313350 TG 10500 13350	PIMP (%)	100
C (1km)	-0.024	Add Flow / Climate Change (%)	0
D1 (1km)	0.305	Minimum Backdrop Height (m)	0.200
D2 (1km)	0.305	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.270	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.313	Min Vel for Auto Design only (m/s)	1.00
F (1km)	2.473	Min Slope for Optimisation (1:X)	1000
Maximum Rainfall (mm/hr)	250		

Designed with Level Soffits

Time Area Diagram for SWS-ML05 New

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	1.248	4-8	2.213	8-12	2.130	12-16	0.788	16-20	0.225	20-24	0.129	24-28	0.041

Total Area Contributing (ha) = 6.773

Total Pipe Volume (m³) = 2275.405

Network Design Table for SWS-ML05 New

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML5-1.000	93.460	0.234	399.4	0.140	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-1.001	18.193	0.120	151.6	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-2.000	94.151	0.239	393.9	0.140	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-2.001	17.575	0.115	152.8	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.002	67.665	0.497	136.1	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML5-3.000	74.644	0.537	139.0	0.117	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-3.001	13.058	0.080	163.2	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-4.000	75.466	0.458	164.8	0.110	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-4.001	12.596	0.154	81.8	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.003	100.131	1.252	80.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML5-5.000	1.990	0.589	3.4	0.000	5.00	0.0		0.050	o	100	Pipe/Conduit	
ML5-5.001	73.099	0.710	103.0	0.100	0.00	0.0		0.015	5 \/	150	1:5 V	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML5-1.000	37.75	11.34	54.749	0.140	0.0	0.0	0.0	0.25	121.6	14.4
ML5-1.001	37.10	11.62	53.290	0.140	0.0	0.0	0.0	1.06	42.1	14.4
ML5-2.000	37.74	11.34	54.749	0.140	0.0	0.0	0.0	0.25	122.5	14.3
ML5-2.001	37.11	11.62	53.285	0.140	0.0	0.0	0.0	1.06	42.0	14.3
ML5-1.002	35.73	12.27	52.945	0.281	0.0	0.0	0.0	1.74	276.8	27.2
ML5-3.000	48.16	7.99	54.515	0.117	0.0	0.0	0.0	0.42	206.2	15.3
ML5-3.001	47.29	8.20	52.753	0.117	0.0	0.0	0.0	1.02	40.6	15.3
ML5-4.000	46.94	8.29	54.510	0.110	0.0	0.0	0.0	0.38	189.4	14.0
ML5-4.001	46.37	8.43	52.827	0.110	0.0	0.0	0.0	1.45	57.5	14.0
ML5-1.003	34.32	13.01	52.448	0.508	0.0	0.0	0.0	2.27	361.8	47.2
ML5-5.000	66.36	5.04	54.510	0.000	0.0	0.0	0.0	0.93	7.3	0.0
ML5-5.001	58.13	6.09	53.971	0.100	0.0	0.0	0.0	1.15	129.7	15.8

Network Design Table for SWS-ML05 New

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML5-5.002	17.990	0.190	94.7	0.026	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-6.000	37.021	0.831	44.5	0.026	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-6.001	7.015	0.047	150.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML5-5.003	14.537	0.097	150.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML5-7.000	73.215	0.963	76.0	0.145	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-7.001	18.448	0.191	96.6	0.025	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-8.000	40.776	0.765	53.3	0.000	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-9.000	99.817	0.429	232.7	0.016	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-10.000	83.087	1.107	75.1	0.074	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-11.000	113.837	0.742	153.4	0.099	5.00	0.0		0.080	1 _/	450	1:1 Ditch	
ML5-9.001	10.997	0.074	148.6	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-8.001	51.521	1.142	45.1	0.105	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-8.002	90.347	1.008	89.6	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML5-8.003	11.649	0.070	166.4	0.000	0.00	0.0	1.500		o	375	Pipe/Conduit	
ML5-7.002	14.365	0.553	26.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML5-1.004	101.263	0.919	110.2	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML5-12.000	86.692	1.402	61.8	0.120	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-13.000	84.746	0.425	199.4	0.031	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-13.001	6.846	0.045	152.1	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-12.001	22.938	0.153	149.9	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.005	101.078	1.959	51.6	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML5-5.002	54.49	6.69	53.211	0.126	0.0	0.0	0.0	0.50	249.8	18.6
ML5-6.000	57.86	6.13	53.021	0.026	0.0	0.0	0.0	0.54	98.0	4.1
ML5-6.001	57.35	6.21	51.415	0.026	0.0	0.0	0.0	1.48	163.1	4.1
ML5-5.003	53.58	6.85	51.368	0.152	0.0	0.0	0.0	1.48	163.2	22.0
ML5-7.000	59.38	5.91	54.228	0.145	0.0	0.0	0.0	1.34	151.0	23.2
ML5-7.001	55.43	6.52	53.215	0.170	0.0	0.0	0.0	0.50	247.4	25.5
ML5-8.000	56.38	6.37	57.284	0.000	0.0	0.0	0.0	0.50	89.6	0.0
ML5-9.000	36.32	11.98	57.419	0.016	0.0	0.0	0.0	0.24	42.9	1.6
ML5-10.000	46.88	8.30	58.097	0.074	0.0	0.0	0.0	0.42	75.5	9.4
ML5-11.000	41.38	9.94	57.582	0.099	0.0	0.0	0.0	0.38	155.7	11.1
ML5-9.001	35.97	12.16	55.468	0.189	0.0	0.0	0.0	1.07	42.6	18.4
ML5-8.001	33.03	13.74	55.319	0.294	0.0	0.0	0.0	0.54	97.4	26.3
ML5-8.002	31.62	14.63	52.902	0.294	0.0	0.0	0.0	1.69	187.1	26.3
ML5-8.003	31.39	14.79	51.894	0.294	0.0	0.0	0.0	1.24	137.2	26.3
ML5-7.002	31.29	14.85	51.824	0.464	0.0	0.0	0.0	3.57	394.0	39.3
ML5-1.004	30.18	15.65	51.121	1.123	0.0	0.0	0.0	2.13	461.8	91.8
ML5-12.000	51.20	7.31	53.221	0.120	0.0	0.0	0.0	0.62	309.2	16.6
ML5-13.000	39.85	10.49	52.225	0.031	0.0	0.0	0.0	0.26	46.3	3.3
ML5-13.001	39.57	10.60	50.700	0.031	0.0	0.0	0.0	1.06	42.1	3.3
ML5-12.001	38.66	10.96	50.655	0.151	0.0	0.0	0.0	1.07	42.4	16.6
ML5-1.005	29.53	16.14	50.127	1.274	0.0	0.0	0.0	3.40	960.1	101.9

Network Design Table for SWS-ML05 New

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML5-14.000	104.034	1.433	72.6	0.137	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-14.001	98.216	1.781	55.1	0.141	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-15.000	55.021	0.614	89.6	0.010	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-15.001	56.204	0.287	195.8	0.008	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-16.000	77.140	3.263	23.6	0.070	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-16.001	96.354	1.462	65.9	0.056	0.00	0.0		0.080	1 _/	450	1:1 Ditch	
ML5-17.000	70.527	0.123	573.4	0.028	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-17.001	70.527	1.522	46.3	0.040	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-16.002	11.729	0.048	244.4	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-18.000	70.308	0.439	160.2	0.008	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-18.001	70.293	0.439	160.1	0.009	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-15.002	8.994	0.116	77.5	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-15.003	72.532	0.428	169.5	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-14.002	14.744	0.042	351.1	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML5-19.000	111.332	2.038	54.6	0.195	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-19.001	13.980	0.413	33.9	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.006	99.715	1.919	52.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML5-20.000	98.464	1.848	53.3	0.177	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-20.001	14.122	0.084	168.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-1.007	100.006	1.622	61.7	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML5-21.000	99.429	1.877	53.0	0.144	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-21.001	97.566	1.802	54.1	0.144	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-21.002	15.439	0.103	149.9	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-22.000	95.790	1.828	52.4	0.172	5.00	0.0		0.050	\/	-1	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML5-14.000	48.07	8.01	53.024	0.137	0.0	0.0	0.0	0.58	285.3	17.9
ML5-14.001	39.86	10.48	51.591	0.279	0.0	0.0	0.0	0.66	327.4	30.1
ML5-15.000	50.83	7.39	52.051	0.010	0.0	0.0	0.0	0.38	69.1	1.3
ML5-15.001	38.56	11.00	51.437	0.018	0.0	0.0	0.0	0.26	46.7	1.9
ML5-16.000	54.30	6.72	55.027	0.070	0.0	0.0	0.0	0.75	134.5	10.3
ML5-16.001	42.82	9.46	51.614	0.126	0.0	0.0	0.0	0.59	237.5	14.7
ML5-17.000	34.80	12.75	51.947	0.028	0.0	0.0	0.0	0.15	27.3	2.6
ML5-17.001	31.15	14.95	51.824	0.068	0.0	0.0	0.0	0.53	96.1	5.7
ML5-16.002	30.87	15.14	49.102	0.194	0.0	0.0	0.0	1.00	70.8	16.2
ML5-18.000	44.05	9.08	52.028	0.008	0.0	0.0	0.0	0.29	51.7	1.0
ML5-18.001	34.03	13.16	51.589	0.017	0.0	0.0	0.0	0.29	51.7	1.6
ML5-15.002	30.75	15.23	49.054	0.229	0.0	0.0	0.0	1.79	126.3	19.1
ML5-15.003	29.42	16.23	48.938	0.229	0.0	0.0	0.0	1.20	85.2	19.1
ML5-14.002	29.16	16.44	48.285	0.508	0.0	0.0	0.0	1.19	257.5	40.1
ML5-19.000	48.99	7.79	51.819	0.195	0.0	0.0	0.0	0.66	328.9	25.9
ML5-19.001	48.54	7.90	48.956	0.195	0.0	0.0	0.0	2.26	89.7	25.9
ML5-1.006	28.57	16.93	48.168	1.977	0.0	0.0	0.0	3.38	956.7	153.0
ML5-20.000	50.60	7.44	49.781	0.177	0.0	0.0	0.0	0.67	333.0	24.3
ML5-20.001	49.70	7.63	46.633	0.177	0.0	0.0	0.0	1.21	85.5	24.3
ML5-1.007	27.96	17.47	46.249	2.154	0.0	0.0	0.0	3.11	877.9	163.1
ML5-21.000	50.52	7.46	49.810	0.144	0.0	0.0	0.0	0.67	334.0	19.6
ML5-21.001	41.50	9.89	47.933	0.288	0.0	0.0	0.0	0.67	330.4	32.3
ML5-21.002	40.93	10.09	45.030	0.288	0.0	0.0	0.0	1.28	90.6	32.3
ML5-22.000	51.01	7.35	47.933	0.172	0.0	0.0	0.0	0.68	335.8	23.7

Network Design Table for SWS-ML05 New

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML5-22.001	14.814	0.103	143.8	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.008	99.914	1.981	50.4	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML5-23.000	98.114	1.825	53.8	0.175	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-24.000	79.945	1.342	59.6	0.041	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-24.001	80.103	1.862	43.0	0.045	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-24.002	7.525	0.050	150.5	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-24.003	4.628	0.030	154.3	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-25.000	84.540	1.539	54.9	0.011	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-25.001	75.062	1.481	50.7	0.008	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-24.004	77.577	4.463	17.4	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-23.001	15.563	0.060	259.4	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML5-26.000	97.002	1.826	53.1	0.179	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-26.001	15.661	0.254	61.7	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.009	111.072	1.726	64.4	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
ML5-27.000	33.362	0.615	54.2	0.054	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-27.001	78.532	1.366	57.5	0.117	0.00	0.0		0.015	5 \/	150	1:5 V	
ML5-27.002	14.857	0.278	53.4	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML5-28.000	31.905	0.710	44.9	0.068	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-28.001	81.080	1.713	47.3	0.159	0.00	0.0		0.015	5 \/	150	1:5 V	
ML5-28.002	14.937	0.063	237.1	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML5-1.010	36.404	0.500	72.8	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML5-29.000	43.374	0.406	106.8	0.064	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-29.001	11.902	0.372	32.0	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML5-1.011	91.823	0.300	306.1	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML5-22.001	49.94	7.58	45.105	0.172	0.0	0.0	0.0	1.09	43.3	23.7
ML5-1.008	27.43	17.95	44.627	2.614	0.0	0.0	0.0	3.43	971.1	194.2
ML5-23.000	50.59	7.44	46.131	0.175	0.0	0.0	0.0	0.67	331.6	24.0
ML5-24.000	46.14	8.49	51.953	0.041	0.0	0.0	0.0	0.38	37.3	5.2
ML5-24.001	38.79	10.90	50.611	0.086	0.0	0.0	0.0	0.55	99.7	9.0
ML5-24.002	38.50	11.02	47.624	0.086	0.0	0.0	0.0	1.06	42.3	9.0
ML5-24.003	38.32	11.10	47.574	0.086	0.0	0.0	0.0	1.05	41.8	9.0
ML5-25.000	48.64	7.87	52.131	0.011	0.0	0.0	0.0	0.49	88.2	1.5
ML5-25.001	40.29	10.33	50.592	0.019	0.0	0.0	0.0	0.51	91.9	2.1
ML5-24.004	37.52	11.44	47.469	0.105	0.0	0.0	0.0	3.79	267.8	10.7
ML5-23.001	37.10	11.62	42.781	0.280	0.0	0.0	0.0	1.39	300.0	28.2
ML5-26.000	50.78	7.40	46.105	0.179	0.0	0.0	0.0	0.67	333.5	24.7
ML5-26.001	50.05	7.56	43.275	0.179	0.0	0.0	0.0	1.67	66.3	24.7
ML5-1.009	26.88	18.48	42.496	3.073	0.0	0.0	0.0	3.49	1542.7	223.8
ML5-27.000	59.91	5.83	44.279	0.054	0.0	0.0	0.0	0.67	330.1	8.8
ML5-27.001	54.52	6.68	43.714	0.171	0.0	0.0	0.0	1.54	173.6	25.2
ML5-27.002	54.02	6.77	41.348	0.171	0.0	0.0	0.0	2.79	443.1	25.2
ML5-28.000	60.69	5.73	44.506	0.068	0.0	0.0	0.0	0.73	362.7	11.2
ML5-28.001	55.45	6.52	43.846	0.227	0.0	0.0	0.0	1.70	191.4	34.1
ML5-28.002	54.54	6.68	40.983	0.227	0.0	0.0	0.0	1.58	445.9	34.1
ML5-1.010	26.71	18.65	40.695	3.472	0.0	0.0	0.0	3.48	1861.4	251.1
ML5-29.000	55.44	6.52	42.298	0.064	0.0	0.0	0.0	0.48	235.2	9.6
ML5-29.001	54.94	6.61	41.167	0.064	0.0	0.0	0.0	2.32	92.3	9.6
ML5-1.011	25.84	19.56	40.195	3.536	0.0	0.0	0.0	1.69	904.3	251.1

Network Design Table for SWS-ML05 New

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML5-30.000	91.310	0.544	167.8	0.094	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-1.012	32.824	0.295	111.3	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML5-1.013	40.045	0.250	160.2	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
ML5-31.000	44.955	0.441	101.9	0.087	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-31.001	54.542	0.183	298.0	0.090	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-32.000	34.581	0.484	71.4	0.053	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-32.001	100.026	0.741	135.0	0.174	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-31.002	12.782	0.091	140.5	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML5-33.000	52.256	0.162	322.6	0.000	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.000	76.378	0.157	486.5	0.077	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.001	100.350	0.685	146.5	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-35.000	99.489	0.827	120.3	0.102	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.002	99.979	1.223	81.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-36.000	99.369	1.223	81.3	0.102	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.003	100.005	1.764	56.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-37.000	99.356	1.764	56.3	0.100	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.004	100.006	2.039	49.0	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
ML5-38.000	99.501	2.039	48.8	0.101	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.005	52.660	0.978	53.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML5-39.000	123.788	0.421	294.0	0.170	5.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-39.001	100.035	0.955	104.7	0.138	0.00	0.0		0.050	\/	-1	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML5-30.000	54.50	6.68	42.070	0.094	0.0	0.0	0.0	0.90	101.6	13.8
ML5-1.012	25.67	19.74	39.895	3.629	0.0	0.0	0.0	2.97	1889.5	252.4
ML5-1.013	25.43	20.01	39.600	3.629	0.0	0.0	0.0	2.47	1573.4	252.4
ML5-31.000	55.33	6.54	41.482	0.087	0.0	0.0	0.0	0.49	240.8	13.0
ML5-31.001	41.97	9.74	41.041	0.176	0.0	0.0	0.0	0.28	140.8	20.0
ML5-32.000	58.80	5.99	42.083	0.053	0.0	0.0	0.0	0.58	287.6	8.4
ML5-32.001	41.38	9.94	41.599	0.227	0.0	0.0	0.0	0.42	209.2	25.5
ML5-31.002	41.05	10.05	39.953	0.403	0.0	0.0	0.0	1.89	408.7	44.9
ML5-33.000	56.56	6.34	41.685	0.000	0.0	0.0	0.0	0.65	73.3	0.0
ML5-34.000	50.79	7.40	48.828	0.077	0.0	0.0	0.0	0.53	59.7	10.7
ML5-34.001	45.42	8.69	47.321	0.077	0.0	0.0	0.0	1.30	91.7	10.7
ML5-35.000	55.25	6.55	48.813	0.102	0.0	0.0	0.0	1.07	120.0	15.3
ML5-34.002	42.24	9.65	46.636	0.179	0.0	0.0	0.0	1.74	123.0	20.5
ML5-36.000	56.94	6.28	47.986	0.102	0.0	0.0	0.0	1.30	146.1	15.7
ML5-34.003	39.97	10.44	45.413	0.281	0.0	0.0	0.0	2.09	147.9	30.4
ML5-37.000	58.33	6.06	46.763	0.100	0.0	0.0	0.0	1.56	175.4	15.8
ML5-34.004	38.34	11.09	43.574	0.381	0.0	0.0	0.0	2.59	286.4	39.6
ML5-38.000	58.82	5.99	44.999	0.101	0.0	0.0	0.0	1.68	188.5	16.0
ML5-34.005	37.60	11.40	41.460	0.482	0.0	0.0	0.0	2.78	441.4	49.0
ML5-39.000	35.87	12.20	48.168	0.170	0.0	0.0	0.0	0.29	141.8	16.5
ML5-39.001	30.14	15.68	47.747	0.308	0.0	0.0	0.0	0.48	237.5	25.1

Network Design Table for SWS-ML05 New

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML5-39.002	100.032	1.506	66.4	0.157	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-39.003	100.028	1.993	50.2	0.158	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-39.004	100.018	1.811	55.2	0.151	0.00	0.0		0.050	\/	-1	Pipe/Conduit	
ML5-39.005	12.783	0.050	255.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
ML5-34.006	47.067	0.297	158.5	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML5-40.000	99.094	1.275	77.7	0.100	5.00	0.0		0.015	5 \/	150	1:5 V	
ML5-34.007	52.905	0.173	305.8	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML5-31.003	11.817	0.071	166.9	0.053	0.00	0.0	0.600		o	750	Pipe/Conduit	
ML5-41.000	101.491	1.249	81.3	0.049	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML5-41.001	99.193	1.749	56.7	0.042	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML5-41.002	101.027	2.040	49.5	0.039	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML5-41.003	99.869	1.280	78.0	0.041	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML5-41.004	51.195	0.655	78.2	0.026	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML5-31.004	20.779	0.191	108.8	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML5-31.005	40.787	0.250	163.1	0.000	0.00	0.0	0.600		o	825	Pipe/Conduit	
ML5-42.000	95.580	1.469	65.1	0.061	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-42.001	110.804	3.579	31.0	0.073	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-43.000	32.110	1.160	27.7	0.008	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-43.001	24.131	0.410	58.9	0.004	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-42.002	11.871	0.291	40.8	0.002	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML5-42.003	26.915	2.846	9.5	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-42.004	159.848	0.500	319.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML5-1.014	13.718	0.137	100.0	0.990	0.00	0.0	0.600		o	450	Pipe/Conduit	
ML5-1.015	15.353	2.109	7.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML5-39.002	26.92	18.44	46.792	0.465	0.0	0.0	0.0	0.60	298.3	33.9
ML5-39.003	24.72	20.85	45.286	0.623	0.0	0.0	0.0	0.69	343.2	41.7
ML5-39.004	22.83	23.37	43.293	0.774	0.0	0.0	0.0	0.66	327.1	47.8
ML5-39.005	22.73	23.52	40.457	0.774	0.0	0.0	0.0	1.40	302.2	47.8
ML5-34.006	22.46	23.93	40.332	1.255	0.0	0.0	0.0	1.93	546.2	76.4
ML5-40.000	57.14	6.24	42.960	0.100	0.0	0.0	0.0	1.33	149.3	15.4
ML5-34.007	22.06	24.57	40.035	1.355	0.0	0.0	0.0	1.39	392.2	80.9
ML5-31.003	22.00	24.66	39.862	1.811	0.0	0.0	0.0	2.16	955.8	107.9
ML5-41.000	56.62	6.33	46.764	0.049	0.0	0.0	0.0	1.27	50.7	7.6
ML5-41.001	50.73	7.41	45.515	0.091	0.0	0.0	0.0	1.53	60.7	12.5
ML5-41.002	46.34	8.44	43.766	0.130	0.0	0.0	0.0	1.63	64.9	16.3
ML5-41.003	42.01	9.72	41.726	0.171	0.0	0.0	0.0	1.30	51.7	19.4
ML5-41.004	40.45	10.27	40.371	0.196	0.0	0.0	0.0	1.57	110.9	21.5
ML5-31.004	21.92	24.78	39.791	2.007	0.0	0.0	0.0	2.85	1521.5	119.2
ML5-31.005	21.75	25.07	39.600	2.007	0.0	0.0	0.0	2.32	1241.2	119.2
ML5-42.000	45.98	8.54	48.985	0.061	0.0	0.0	0.0	0.45	81.1	7.6
ML5-42.001	37.69	11.36	47.516	0.134	0.0	0.0	0.0	0.65	117.5	13.6
ML5-43.000	60.33	5.77	45.507	0.008	0.0	0.0	0.0	0.69	124.3	1.3
ML5-43.001	54.85	6.62	44.347	0.011	0.0	0.0	0.0	0.47	85.3	1.7
ML5-42.002	36.91	11.71	43.937	0.147	0.0	0.0	0.0	0.57	102.4	14.7
ML5-42.003	36.72	11.80	42.446	0.147	0.0	0.0	0.0	5.14	363.4	14.7
ML5-42.004	31.30	14.85	39.600	0.147	0.0	0.0	0.0	0.87	61.8	14.7
ML5-1.014	21.68	25.18	39.300	6.773	0.0	0.0	0.0	2.03	323.4«	397.7
ML5-1.015	21.66	25.22	39.163	6.773	0.0	0.0	0.0	7.57	1204.1	397.7

Conduit Sections for SWS-ML05 New

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-1	\/	4001	200			0.487	0.495

Manhole Schedules for SWS-ML05 New

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)
ML5-01	54.949	0.200	Open Manhole	10	ML5-1.000	54.749	-1				
ML5-02	54.715	1.425	Open Manhole	1500	ML5-1.001	53.290	225	ML5-1.000	54.515	-1	1200
ML5-03	54.949	0.200	Open Manhole	10	ML5-2.000	54.749	-1				
ML5-04	54.710	1.425	Open Manhole	1500	ML5-2.001	53.285	225	ML5-2.000	54.510	-1	1200
ML5-05	55.125	2.180	Open Manhole	1500	ML5-1.002	52.945	450	ML5-1.001	53.170	225	
								ML5-2.001	53.170	225	
ML5-06	54.715	0.200	Open Manhole	10	ML5-3.000	54.515	-1				
ML5-07	54.178	1.425	Open Manhole	1500	ML5-3.001	52.753	225	ML5-3.000	53.978	-1	1200
ML5-09	54.710	0.200	Open Manhole	10	ML5-4.000	54.510	-1				
ML5-09A	54.252	1.425	Open Manhole	1500	ML5-4.001	52.827	225	ML5-4.000	54.052	-1	1200
ML5-08	54.609	2.161	Open Manhole	1500	ML5-1.003	52.448	450	ML5-1.002	52.448	450	
								ML5-3.001	52.673	225	
								ML5-4.001	52.673	225	
ML5-Dummy 09	54.710	0.200	Open Manhole	10	ML5-5.000	54.510	100				
ML5-10	54.121	0.200	Open Manhole	10	ML5-5.001	53.971	150	ML5-5.000	53.921	100	
ML5-11	53.411	0.200	Open Manhole	10	ML5-5.002	53.211	-1	ML5-5.001	53.261	150	
ML5-12	53.321	0.300	Open Manhole	10	ML5-6.000	53.021	300				
ML5-13	52.490	1.075	Open Manhole	1050	ML5-6.001	51.415	375	ML5-6.000	52.190	300	700
ML5-14	53.221	1.853	Open Manhole	1500	ML5-5.003	51.368	375	ML5-5.002	53.021	-1	1478
								ML5-6.001	51.368	375	
ML5-15	54.378	0.150	Open Manhole	10	ML5-7.000	54.228	150				
ML5-16	53.415	0.200	Open Manhole	10	ML5-7.001	53.215	-1	ML5-7.000	53.265	150	
ML5-17	58.698	1.414	Open Manhole	10	ML5-8.000	57.284	300				
ML5-18	57.780	0.361	Open Manhole	10	ML5-9.000	57.419	300				
ML5-19	58.397	0.300	Open Manhole	10	ML5-10.000	58.097	300				
ML5-20	58.032	0.450	Open Manhole	10	ML5-11.000	57.582	450				
ML5-21	57.226	1.758	Open Manhole	1050	ML5-9.001	55.468	225	ML5-9.000	56.990	300	1597
								ML5-10.000	56.990	300	1597
								ML5-11.000	56.840	450	1597
ML5-22	56.590	1.271	Open Manhole	1050	ML5-8.001	55.319	300	ML5-8.000	56.519	300	1200
								ML5-9.001	55.394	225	
ML5-23	54.477	1.575	Open Manhole	1050	ML5-8.002	52.902	375	ML5-8.001	54.177	300	1200
ML5-24	53.469	1.575	Open Manhole	1350	ML5-8.003	51.894	375	ML5-8.002	51.894	375	
ML5-25	53.224	1.400	Open Manhole	1500	ML5-7.002	51.824	375	ML5-7.001	53.024	-1	1025
								ML5-8.003	51.824	375	
ML5-26	53.612	2.491	Open Manhole	2100	ML5-1.004	51.121	525	ML5-1.003	51.196	450	
								ML5-5.003	51.271	375	
								ML5-7.002	51.271	375	
ML5-27	53.421	0.200	Open Manhole	10	ML5-12.000	53.221	-1				
ML5-28	52.525	0.300	Open Manhole	10	ML5-13.000	52.225	300				
ML5-29	52.100	1.400	Open Manhole	10	ML5-13.001	50.700	225	ML5-13.000	51.800	300	1175
ML5-30	52.019	1.364	Open Manhole	1500	ML5-12.001	50.655	225	ML5-12.000	51.819	-1	1139
								ML5-13.001	50.655	225	
ML5-31	52.180	2.053	Open Manhole	1500	ML5-1.005	50.127	600	ML5-1.004	50.202	525	
								ML5-12.001	50.502	225	
ML5-32	53.224	0.200	Open Manhole	10	ML5-14.000	53.024	-1				
ML5-33	51.791	0.200	Open Manhole	10	ML5-14.001	51.591	-1	ML5-14.000	51.591	-1	
ML5-34	52.351	0.300	Open Manhole	10	ML5-15.000	52.051	300				
ML5-35	51.737	0.300	Open Manhole	10	ML5-15.001	51.437	300	ML5-15.000	51.437	300	
ML5-36	55.327	0.300	Open Manhole	10	ML5-16.000	55.027	300				
ML5-37	52.064	0.450	Open Manhole	10	ML5-16.001	51.614	450	ML5-16.000	51.764	300	
ML5-38	52.247	0.300	Open Manhole	10	ML5-17.000	51.947	300				
ML5-39	52.124	0.300	Open Manhole	10	ML5-17.001	51.824	300	ML5-17.000	51.824	300	
ML5-40	50.602	1.500	Open Manhole	1050	ML5-16.002	49.102	300	ML5-16.001	50.152	450	1200
								ML5-17.001	50.302	300	1200
ML5-41	52.328	0.300	Open Manhole	10	ML5-18.000	52.028	300				
ML5-42	51.889	0.300	Open Manhole	10	ML5-18.001	51.589	300	ML5-18.000	51.589	300	
ML5-43	51.450	2.396	Open Manhole	1050	ML5-15.002	49.054	300	ML5-15.001	51.150	300	2096
								ML5-16.002	49.054	300	

Manhole Schedules for SWS-ML05 New

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)
								ML5-18.001	51.150	300	2096
ML5-44	51.585	2.647	Open Manhole	1200	ML5-15.003	48.938	300	ML5-15.002	48.938	300	
ML5-45	50.010	1.725	Open Manhole	1500	ML5-14.002	48.285	525	ML5-14.001	49.810	-1	1200
								ML5-15.003	48.510	300	
ML5-46	52.019	0.200	Open Manhole	10	ML5-19.000	51.819	-1				
ML5-47	49.981	1.025	Open Manhole	1500	ML5-19.001	48.956	225	ML5-19.000	49.781	-1	800
ML5-48	50.332	2.164	Open Manhole	1500	ML5-1.006	48.168	600	ML5-1.005	48.168	600	
								ML5-14.002	48.243	525	
								ML5-19.001	48.543	225	
ML5-49	49.981	0.200	Open Manhole	10	ML5-20.000	49.781	-1				
ML5-50	48.133	1.500	Open Manhole	1500	ML5-20.001	46.633	300	ML5-20.000	47.933	-1	1200
ML5-51	48.480	2.231	Open Manhole	1800	ML5-1.007	46.249	600	ML5-1.006	46.249	600	
								ML5-20.001	46.549	300	
ML5-52	50.010	0.200	Open Manhole	10	ML5-21.000	49.810	-1				
ML5-53	48.133	0.200	Open Manhole	10	ML5-21.001	47.933	-1	ML5-21.000	47.933	-1	
ML5-54	46.331	1.301	Open Manhole	1500	ML5-21.002	45.030	300	ML5-21.001	46.131	-1	1001
ML5-55	48.133	0.200	Open Manhole	10	ML5-22.000	47.933	-1				
ML5-56	46.305	1.200	Open Manhole	1500	ML5-22.001	45.105	225	ML5-22.000	46.105	-1	975
ML5-57	46.625	1.998	Open Manhole	1800	ML5-1.008	44.627	600	ML5-1.007	44.627	600	
								ML5-21.002	44.927	300	
								ML5-22.001	45.002	225	
ML5-58	46.331	0.200	Open Manhole	10	ML5-23.000	46.131	-1				
ML5-59	52.150	0.197	Open Manhole	10	ML5-24.000	51.953	300				
ML5-60	50.911	0.300	Open Manhole	10	ML5-24.001	50.611	300	ML5-24.000	50.611	300	
ML5-61	49.049	1.425	Open Manhole	1050	ML5-24.002	47.624	225	ML5-24.001	48.749	300	1200
ML5-62	49.386	1.812	Open Manhole	1500	ML5-24.003	47.574	225	ML5-24.002	47.574	225	
ML5-63	52.431	0.300	Open Manhole	10	ML5-25.000	52.131	300				
ML5-64	50.892	0.300	Open Manhole	10	ML5-25.001	50.592	300	ML5-25.000	50.592	300	
ML5-65	49.411	1.942	Open Manhole	1200	ML5-24.004	47.469	300	ML5-24.003	47.544	225	
								ML5-25.001	49.111	300	1642
ML5-66	44.506	1.725	Open Manhole	1500	ML5-23.001	42.781	525	ML5-23.000	44.306	-1	1200
								ML5-24.004	43.006	300	
ML5-67	46.305	0.200	Open Manhole	10	ML5-26.000	46.105	-1				
ML5-68	44.479	1.204	Open Manhole	1500	ML5-26.001	43.275	225	ML5-26.000	44.279	-1	979
ML5-69	44.773	2.277	Open Manhole	2100	ML5-1.009	42.496	750	ML5-1.008	42.646	600	
								ML5-23.001	42.721	525	
								ML5-26.001	43.021	225	
ML5-70	44.479	0.200	Open Manhole	10	ML5-27.000	44.279	-1				
ML5-71	43.864	0.200	Open Manhole	10	ML5-27.001	43.714	150	ML5-27.000	43.664	-1	
ML5-72	42.498	1.150	Open Manhole	1500	ML5-27.002	41.348	450	ML5-27.001	42.348	150	700
ML5-73	44.706	0.200	Open Manhole	10	ML5-28.000	44.506	-1				
ML5-74	43.996	0.200	Open Manhole	10	ML5-28.001	43.846	150	ML5-28.000	43.796	-1	
ML5-75	42.283	1.300	Open Manhole	1500	ML5-28.002	40.983	600	ML5-28.001	42.133	150	700
ML5-76	42.720	2.025	Open Manhole	2100	ML5-1.010	40.695	825	ML5-1.009	40.770	750	
								ML5-27.002	41.070	450	
								ML5-28.002	40.920	600	
ML5-77	42.498	0.200	Open Manhole	10	ML5-29.000	42.298	-1				
ML5-78	42.092	0.925	Open Manhole	1500	ML5-29.001	41.167	225	ML5-29.000	41.892	-1	700
ML5-79	42.220	2.025	Open Manhole	2100	ML5-1.011	40.195	825	ML5-1.010	40.195	825	
								ML5-29.001	40.795	225	
ML5-80	42.220	0.150	Junction		ML5-30.000	42.070	150				
ML5-81	41.676	1.781	Open Manhole	1800	ML5-1.012	39.895	900	ML5-1.011	39.895	825	
								ML5-30.000	41.526	150	881
ML5-82	41.300	1.700	Open Manhole	1800	ML5-1.013	39.600	900	ML5-1.012	39.600	900	
ML5-83	41.682	0.200	Open Manhole	10	ML5-31.000	41.482	-1				
ML5-84	41.241	0.200	Open Manhole	10	ML5-31.001	41.041	-1	ML5-31.000	41.041	-1	
ML5-85	42.283	0.200	Open Manhole	10	ML5-32.000	42.083	-1				
ML5-86	41.799	0.200	Open Manhole	10	ML5-32.001	41.599	-1	ML5-32.000	41.599	-1	
ML5-87	41.058	1.105	Open Manhole	1500	ML5-31.002	39.953	525	ML5-31.001	40.858	-1	580

Manhole Schedules for SWS-ML05 New

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)
								ML5-32.001	40.858	-1	580
ML5-88	41.835	0.150	Open Manhole	10	ML5-33.000	41.685	150				
ML5-89	48.978	0.150	Open Manhole	10	ML5-34.000	48.828	150				
ML5-90	48.821	1.500	Open Manhole	1050	ML5-34.001	47.321	300	ML5-34.000	48.671	150	1200
ML5-91	48.963	0.150	Open Manhole	10	ML5-35.000	48.813	150				
ML5-92	48.136	1.500	Open Manhole	1050	ML5-34.002	46.636	300	ML5-34.001	46.636	300	
								ML5-35.000	47.986	150	1200
ML5-93	48.136	0.150	Open Manhole	10	ML5-36.000	47.986	150				
ML5-94	46.913	1.500	Open Manhole	1050	ML5-34.003	45.413	300	ML5-34.002	45.413	300	
								ML5-36.000	46.763	150	1200
ML5-95	46.913	0.150	Open Manhole	10	ML5-37.000	46.763	150				
ML5-96	45.149	1.575	Open Manhole	1500	ML5-34.004	43.574	375	ML5-34.003	43.649	300	
								ML5-37.000	44.999	150	1200
ML5-97	45.149	0.150	Open Manhole	10	ML5-38.000	44.999	150				
ML5-98	43.110	1.650	Open Manhole	1500	ML5-34.005	41.460	450	ML5-34.004	41.535	375	
								ML5-38.000	42.960	150	1200
ML5-99	48.368	0.200	Open Manhole	10	ML5-39.000	48.168	-1				
ML5-100	47.947	0.200	Open Manhole	10	ML5-39.001	47.747	-1	ML5-39.000	47.747	-1	
ML5-101	46.992	0.200	Open Manhole	1200	ML5-39.002	46.792	-1	ML5-39.001	46.792	-1	
ML5-102	45.486	0.200	Open Manhole	10	ML5-39.003	45.286	-1	ML5-39.002	45.286	-1	
ML5-103	43.493	0.200	Open Manhole	10	ML5-39.004	43.293	-1	ML5-39.003	43.293	-1	
ML5-104	41.682	1.225	Open Manhole	1500	ML5-39.005	40.457	525	ML5-39.004	41.482	-1	700
ML5-105	42.285	1.953	Open Manhole	1800	ML5-34.006	40.332	600	ML5-34.005	40.482	450	
								ML5-39.005	40.407	525	
ML5-106	43.110	0.150	Open Manhole	10	ML5-40.000	42.960	150				
ML5-107	41.835	1.800	Open Manhole	1800	ML5-34.007	40.035	600	ML5-34.006	40.035	600	
								ML5-40.000	41.685	150	1200
ML5-108	41.673	1.811	Open Manhole	1800	ML5-31.003	39.862	750	ML5-31.002	39.862	525	
								ML5-33.000	41.523	150	1061
								ML5-34.007	39.862	600	
ML5-109	48.317	1.553	Open Manhole	1050	ML5-41.000	46.764	225				
ML5-110	47.070	1.555	Open Manhole	1200	ML5-41.001	45.515	225	ML5-41.000	45.515	225	
ML5-111	45.318	1.552	Open Manhole	1200	ML5-41.002	43.766	225	ML5-41.001	43.766	225	
ML5-112	43.281	1.555	Open Manhole	1200	ML5-41.003	41.726	225	ML5-41.002	41.726	225	
ML5-113	42.110	1.739	Open Manhole	1800	ML5-41.004	40.371	300	ML5-41.003	40.446	225	
ML5-114	42.073	2.357	Open Manhole	1800	ML5-31.004	39.791	825	ML5-31.003	39.791	750	
								ML5-41.004	39.716	300	
ML5-115	41.300	1.700	Open Manhole	1800	ML5-31.005	39.600	825	ML5-31.004	39.600	825	
ML5-116	49.285	0.300	Open Manhole	10	ML5-42.000	48.985	300				
ML5-117	47.816	0.300	Open Manhole	10	ML5-42.001	47.516	300	ML5-42.000	47.516	300	
ML5-118	45.807	0.300	Open Manhole	10	ML5-43.000	45.507	300				
ML5-119	44.647	0.300	Junction		ML5-43.001	44.347	300	ML5-43.000	44.347	300	
ML5-120	44.237	0.300	Open Manhole	10	ML5-42.002	43.937	300	ML5-42.001	43.937	300	
								ML5-43.001	43.937	300	
ML5-121	43.946	1.500	Open Manhole	1050	ML5-42.003	42.446	300	ML5-42.002	43.646	300	1200
ML5-122	41.300	1.700	Junction		ML5-42.004	39.600	300	ML5-42.003	39.600	300	
ML5-AB	41.300	2.200	Open Manhole	2100	ML5-1.014	39.300	450	ML5-1.013	39.350	900	500
								ML5-31.005	39.350	825	425
								ML5-42.004	39.100	300	
ML5-123	41.300	2.137	Open Manhole	1500	ML5-1.015	39.163	450	ML5-1.014	39.163	450	
ML5-Outfall	38.300	1.246	Open Manhole	0		OUTFALL		ML5-1.015	37.054	450	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML5-01	15300.412	524784.769	15300.412	524784.769	Required	

Manhole Schedules for SWS-ML05 New

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML5-02	15230.245	524723.041	15230.245	524723.041	Required	
ML5-03	15284.860	524802.795	15284.860	524802.795	Required	
ML5-04	15214.173	524740.612	15214.173	524740.612	Required	
ML5-05	15212.052	524723.165	15212.052	524723.165	Required	
ML5-06	15229.153	524722.069	15229.153	524722.069	Required	
ML5-07	15171.596	524674.541	15171.596	524674.541	Required	
ML5-09	15213.511	524739.767	15213.511	524739.767	Required	
ML5-09A	15155.186	524691.878	15155.186	524691.878	Required	
ML5-08	15159.809	524680.162	15159.809	524680.162	Required	
ML5-Dummy 09	15150.529	524690.738	15150.529	524690.738	Required	
ML5-10	15151.873	524689.270	15151.873	524689.270	Required	
ML5-11	15094.277	524644.257	15094.277	524644.257	Required	
ML5-12	15042.961	524657.113	15042.961	524657.113	Required	
ML5-13	15073.976	524636.903	15073.976	524636.903	Required	
ML5-14	15080.000	524633.313	15080.000	524633.313	Required	
ML5-15	15166.767	524670.706	15166.767	524670.706	Required	
ML5-16	15109.083	524625.617	15109.083	524625.617	Required	
ML5-17	15248.904	524619.188	15248.904	524619.188	Required	
ML5-18	15274.458	524748.300	15274.458	524748.300	Required	
ML5-19	15297.688	524709.995	15297.688	524709.995	Required	
ML5-20	15330.591	524597.939	15330.591	524597.939	Required	
ML5-21	15233.453	524657.294	15233.453	524657.294	Required	
ML5-22	15224.083	524651.539	15224.083	524651.539	Required	
ML5-23	15176.259	524670.706	15176.259	524670.706	Required	
ML5-24	15106.021	524613.881	15105.977	524614.016	Required	
ML5-25	15094.387	524614.466	15094.387	524614.466	Required	

Manhole Schedules for SWS-ML05 New

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML5-26	15080.689	524618.792	15080.689	524618.792	Required	
ML5-27	15077.744	524631.657	15077.744	524631.657	Required	
ML5-28	15070.611	524637.642	15070.611	524637.642	Required	
ML5-29	15003.375	524586.060	15003.375	524586.060	Required	
ML5-30	15007.621	524580.690	15007.621	524580.690	Required	
ML5-31	14998.494	524559.646	14998.494	524559.646	Required	
ML5-32	15093.903	524614.303	15093.903	524614.303	Required	
ML5-33	15009.741	524553.149	15009.741	524553.149	Required	
ML5-34	15087.043	524600.721	15087.043	524600.721	Required	
ML5-35	15045.293	524564.885	15045.293	524564.885	Required	
ML5-36	15140.179	524633.011	15140.179	524633.011	Required	
ML5-37	15082.886	524581.358	15082.886	524581.358	Required	
ML5-38	14889.152	524444.179	14889.152	524444.179	Required	
ML5-39	14947.187	524484.254	14947.187	524484.254	Required	
ML5-40	15005.221	524524.329	15005.221	524524.329	Required	
ML5-41	14883.032	524453.535	14883.032	524453.535	Required	
ML5-42	14940.696	524493.759	14940.696	524493.759	Required	
ML5-43	14998.414	524533.881	14998.414	524533.881	Required	
ML5-44	14989.847	524536.620	14989.869	524536.441	Required	
ML5-45	14928.181	524498.434	14928.181	524498.434	Required	
ML5-46	15006.267	524579.727	15006.267	524579.727	Required	
ML5-47	14913.901	524517.579	14913.901	524517.579	Required	
ML5-48	14914.374	524503.607	14914.374	524503.607	Required	
ML5-49	14913.264	524517.130	14913.264	524517.130	Required	
ML5-50	14829.641	524465.146	14829.641	524465.146	Required	
ML5-51	14829.649	524451.024	14829.649	524451.024	Required	

Manhole Schedules for SWS-ML05 New

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML5-52	14926.297	524497.209	14926.297	524497.209	Required	
ML5-53	14841.901	524444.640	14841.901	524444.640	Required	
ML5-54	14757.309	524396.031	14757.309	524396.031	Required	
ML5-55	14827.603	524463.858	14827.603	524463.858	Required	
ML5-56	14744.571	524416.102	14744.571	524416.102	Required	
ML5-57	14742.830	524401.390	14742.830	524401.390	Required	
ML5-58	14755.905	524395.152	14755.905	524395.152	Required	
ML5-59	14886.852	524443.107	14886.852	524443.107	Required	
ML5-60	14821.931	524396.455	14821.931	524396.455	Required	
ML5-61	14749.623	524361.986	14749.623	524361.986	Required	
ML5-62	14745.960	524368.560	14745.960	524368.560	Required	
ML5-63	14881.359	524452.112	14881.359	524452.112	Required	
ML5-64	14810.652	524405.771	14810.652	524405.771	Required	
ML5-65	14743.405	524372.420	14743.405	524372.420	Required	
ML5-66	14669.633	524348.424	14669.633	524348.424	Required	
ML5-67	14743.321	524415.389	14743.321	524415.389	Required	
ML5-68	14658.075	524369.101	14658.075	524369.101	Required	
ML5-69	14655.008	524353.744	14655.008	524353.744	Required	
ML5-70	14657.297	524368.756	14657.297	524368.756	Required	
ML5-71	14627.928	524352.928	14627.928	524352.928	Required	
ML5-72	14558.481	524316.263	14558.481	524316.263	Required	
ML5-73	14667.400	524347.046	14667.400	524347.046	Required	
ML5-74	14639.266	524332.002	14639.266	524332.002	Required	
ML5-75	14568.660	524292.143	14568.660	524292.143	Required	
ML5-76	14557.001	524301.480	14557.001	524301.480	Required	
ML5-77	14557.218	524315.118	14557.218	524315.118	Required	

Manhole Schedules for SWS-ML05 New

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML5-78	14519.110	524294.405	14519.110	524294.405	Required	
ML5-79	14525.026	524284.078	14525.026	524284.078	Required	
ML5-80	14524.572	524283.814			No Entry	
ML5-81	14445.570	524238.054	14445.570	524238.054	Required	
ML5-82	14426.931	524265.072	14427.084	524265.167	Required	
ML5-83	14367.765	524170.341	14367.765	524170.341	Required	
ML5-84	14404.582	524196.135	14404.582	524196.135	Required	
ML5-85	14567.706	524291.601	14567.706	524291.601	Required	
ML5-86	14536.862	524275.966	14536.862	524275.966	Required	
ML5-87	14450.303	524225.866	14450.303	524225.866	Required	
ML5-88	14399.654	524208.219	14399.654	524208.219	Required	
ML5-89	13997.827	523799.258	13997.827	523799.258	Required	
ML5-90	14041.130	523862.164	14041.130	523862.164	Required	
ML5-91	14041.648	523862.877	14041.648	523862.877	Required	
ML5-92	14102.982	523941.187	14102.982	523941.187	Required	
ML5-93	14103.386	523941.669	14103.386	523941.669	Required	
ML5-94	14169.926	524015.444	14169.926	524015.444	Required	
ML5-95	14170.391	524015.925	14170.391	524015.925	Required	
ML5-96	14241.880	524084.896	14241.880	524084.896	Required	
ML5-97	14242.270	524085.248	14242.270	524085.248	Required	
ML5-98	14318.479	524149.191	14318.479	524149.191	Required	
ML5-99	14008.460	523792.394	14008.460	523792.394	Required	
ML5-100	14080.342	523893.125	14080.342	523893.125	Required	
ML5-101	14144.636	523969.737	14144.636	523969.737	Required	
ML5-102	14214.133	524041.657	14214.133	524041.657	Required	
ML5-103	14288.491	524108.532	14288.491	524108.532	Required	

Manhole Schedules for SWS-ML05 New

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML5-104	14367.340	524170.033	14367.340	524170.033	Required	
ML5-105	14360.549	524180.863	14360.549	524180.863	Required	
ML5-106	14318.982	524149.585	14318.982	524149.585	Required	
ML5-107	14399.213	524207.703	14399.213	524207.703	Required	
ML5-108	14443.480	524236.675	14443.480	524236.675	Required	
ML5-109	14095.551	523950.758	14095.551	523950.758	Required	
ML5-110	14163.650	524025.952	14163.753	524025.853	Required	
ML5-111	14235.057	524094.750	14235.153	524094.644	Required	
ML5-112	14312.536	524159.512	14312.623	524159.400	Required	
ML5-113	14393.246	524218.296	14393.246	524218.296	Required	
ML5-114	14436.271	524246.039	14436.271	524246.039	Required	
ML5-115	14423.896	524262.731	14424.020	524262.803	Required	
ML5-116	14125.986	524018.094	14125.986	524018.094	Required	
ML5-117	14194.299	524084.944	14194.299	524084.944	Required	
ML5-118	14237.637	524186.659	14237.637	524186.659	Required	
ML5-119	14265.688	524176.995			No Entry	
ML5-120	14278.734	524156.696	14278.734	524156.696	Required	
ML5-121	14287.320	524164.894	14287.320	524164.894	Required	
ML5-122	14289.903	524191.685			No Entry	
ML5-AB	14407.420	524300.041	14407.420	524300.041	Required	
ML5-123	14409.957	524313.523	14410.060	524313.503	Required	
ML5-Outfall	14412.890	524328.593			No Entry	

PIPELINE SCHEDULES for SWS-ML05 New

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)
ML5-1.000	\/	-1	ML5-01	54.949	54.749	0.000	Open Manhole	10
ML5-1.001	o	225	ML5-02	54.715	53.290	1.200	Open Manhole	1500
ML5-2.000	\/	-1	ML5-03	54.949	54.749	0.000	Open Manhole	10
ML5-2.001	o	225	ML5-04	54.710	53.285	1.200	Open Manhole	1500
ML5-1.002	o	450	ML5-05	55.125	52.945	1.730	Open Manhole	1500
ML5-3.000	\/	-1	ML5-06	54.715	54.515	0.000	Open Manhole	10
ML5-3.001	o	225	ML5-07	54.178	52.753	1.200	Open Manhole	1500
ML5-4.000	\/	-1	ML5-09	54.710	54.510	0.000	Open Manhole	10
ML5-4.001	o	225	ML5-09A	54.252	52.827	1.200	Open Manhole	1500
ML5-1.003	o	450	ML5-08	54.609	52.448	1.711	Open Manhole	1500
ML5-5.000	o	100	ML5-Dummy 09	54.710	54.510	0.100	Open Manhole	10
ML5-5.001	5 \/	150	ML5-10	54.121	53.971	0.000	Open Manhole	10
ML5-5.002	\/	-1	ML5-11	53.411	53.211	0.000	Open Manhole	10
ML5-6.000	1 _/	300	ML5-12	53.321	53.021	0.000	Open Manhole	10
ML5-6.001	o	375	ML5-13	52.490	51.415	0.700	Open Manhole	1050
ML5-5.003	o	375	ML5-14	53.221	51.368	1.478	Open Manhole	1500
ML5-7.000	5 \/	150	ML5-15	54.378	54.228	0.000	Open Manhole	10
ML5-7.001	\/	-1	ML5-16	53.415	53.215	0.000	Open Manhole	10
ML5-8.000	1 _/	300	ML5-17	58.698	57.284	1.114	Open Manhole	10
ML5-9.000	1 _/	300	ML5-18	57.780	57.419	0.061	Open Manhole	10
ML5-10.000	1 _/	300	ML5-19	58.397	58.097	0.000	Open Manhole	10
ML5-11.000	1 _/	450	ML5-20	58.032	57.582	0.000	Open Manhole	10

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)
ML5-1.000	93.460	399.4	ML5-02	54.715	54.515	0.000	Open Manhole	1500
ML5-1.001	18.193	151.6	ML5-05	55.125	53.170	1.730	Open Manhole	1500
ML5-2.000	94.151	393.9	ML5-04	54.710	54.510	0.000	Open Manhole	1500
ML5-2.001	17.575	152.8	ML5-05	55.125	53.170	1.730	Open Manhole	1500
ML5-1.002	67.665	136.1	ML5-08	54.609	52.448	1.711	Open Manhole	1500
ML5-3.000	74.644	139.0	ML5-07	54.178	53.978	0.000	Open Manhole	1500
ML5-3.001	13.058	163.2	ML5-08	54.609	52.673	1.711	Open Manhole	1500
ML5-4.000	75.466	164.8	ML5-09A	54.252	54.052	0.000	Open Manhole	1500
ML5-4.001	12.596	81.8	ML5-08	54.609	52.673	1.711	Open Manhole	1500
ML5-1.003	100.131	80.0	ML5-26	53.612	51.196	1.966	Open Manhole	2100
ML5-5.000	1.990	3.4	ML5-10	54.121	53.921	0.100	Open Manhole	10
ML5-5.001	73.099	103.0	ML5-11	53.411	53.261	0.000	Open Manhole	10
ML5-5.002	17.990	94.7	ML5-14	53.221	53.021	0.000	Open Manhole	1500
ML5-6.000	37.021	44.5	ML5-13	52.490	52.190	0.000	Open Manhole	1050
ML5-6.001	7.015	150.0	ML5-14	53.221	51.368	1.478	Open Manhole	1500
ML5-5.003	14.537	150.0	ML5-26	53.612	51.271	1.966	Open Manhole	2100
ML5-7.000	73.215	76.0	ML5-16	53.415	53.265	0.000	Open Manhole	10
ML5-7.001	18.448	96.6	ML5-25	53.224	53.024	0.000	Open Manhole	1500
ML5-8.000	40.776	53.3	ML5-22	56.590	56.519	-0.229	Open Manhole	1050
ML5-9.000	99.817	232.7	ML5-21	57.226	56.990	-0.064	Open Manhole	1050
ML5-10.000	83.087	75.1	ML5-21	57.226	56.990	-0.064	Open Manhole	1050
ML5-11.000	113.837	153.4	ML5-21	57.226	56.840	-0.064	Open Manhole	1050

PIPELINE SCHEDULES for SWS-ML05 New

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)
ML5-9.001	o	225	ML5-21	57.226	55.468	1.533	Open Manhole	1050
ML5-8.001	1 _/	300	ML5-22	56.590	55.319	0.971	Open Manhole	1050
ML5-8.002	o	375	ML5-23	54.477	52.902	1.200	Open Manhole	1050
ML5-8.003	o	375	ML5-24	53.469	51.894	1.200	Open Manhole	1350
ML5-7.002	o	375	ML5-25	53.224	51.824	1.025	Open Manhole	1500
ML5-1.004	o	525	ML5-26	53.612	51.121	1.966	Open Manhole	2100
ML5-12.000	\/	-1	ML5-27	53.421	53.221	0.000	Open Manhole	10
ML5-13.000	1 _/	300	ML5-28	52.525	52.225	0.000	Open Manhole	10
ML5-13.001	o	225	ML5-29	52.100	50.700	1.175	Open Manhole	10
ML5-12.001	o	225	ML5-30	52.019	50.655	1.139	Open Manhole	1500
ML5-1.005	o	600	ML5-31	52.180	50.127	1.453	Open Manhole	1500
ML5-14.000	\/	-1	ML5-32	53.224	53.024	0.000	Open Manhole	10
ML5-14.001	\/	-1	ML5-33	51.791	51.591	0.000	Open Manhole	10
ML5-15.000	1 _/	300	ML5-34	52.351	52.051	0.000	Open Manhole	10
ML5-15.001	1 _/	300	ML5-35	51.737	51.437	0.000	Open Manhole	10
ML5-16.000	1 _/	300	ML5-36	55.327	55.027	0.000	Open Manhole	10
ML5-16.001	1 _/	450	ML5-37	52.064	51.614	0.000	Open Manhole	10
ML5-17.000	1 _/	300	ML5-38	52.247	51.947	0.000	Open Manhole	10
ML5-17.001	1 _/	300	ML5-39	52.124	51.824	0.000	Open Manhole	10
ML5-16.002	o	300	ML5-40	50.602	49.102	1.200	Open Manhole	1050
ML5-18.000	1 _/	300	ML5-41	52.328	52.028	0.000	Open Manhole	10
ML5-18.001	1 _/	300	ML5-42	51.889	51.589	0.000	Open Manhole	10

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)
ML5-9.001	10.997	148.6	ML5-22	56.590	55.394	0.971	Open Manhole	1050
ML5-8.001	51.521	45.1	ML5-23	54.477	54.177	0.000	Open Manhole	1050
ML5-8.002	90.347	89.6	ML5-24	53.469	51.894	1.200	Open Manhole	1350
ML5-8.003	11.649	166.4	ML5-25	53.224	51.824	1.025	Open Manhole	1500
ML5-7.002	14.365	26.0	ML5-26	53.612	51.271	1.966	Open Manhole	2100
ML5-1.004	101.263	110.2	ML5-31	52.180	50.202	1.453	Open Manhole	1500
ML5-12.000	86.692	61.8	ML5-30	52.019	51.819	0.000	Open Manhole	1500
ML5-13.000	84.746	199.4	ML5-29	52.100	51.800	0.000	Open Manhole	10
ML5-13.001	6.846	152.1	ML5-30	52.019	50.655	1.139	Open Manhole	1500
ML5-12.001	22.938	149.9	ML5-31	52.180	50.502	1.453	Open Manhole	1500
ML5-1.005	101.078	51.6	ML5-48	50.332	48.168	1.564	Open Manhole	1500
ML5-14.000	104.034	72.6	ML5-33	51.791	51.591	0.000	Open Manhole	10
ML5-14.001	98.216	55.1	ML5-45	50.010	49.810	0.000	Open Manhole	1500
ML5-15.000	55.021	89.6	ML5-35	51.737	51.437	0.000	Open Manhole	10
ML5-15.001	56.204	195.8	ML5-43	51.450	51.150	0.000	Open Manhole	1050
ML5-16.000	77.140	23.6	ML5-37	52.064	51.764	0.000	Open Manhole	10
ML5-16.001	96.354	65.9	ML5-40	50.602	50.152	0.000	Open Manhole	1050
ML5-17.000	70.527	573.4	ML5-39	52.124	51.824	0.000	Open Manhole	10
ML5-17.001	70.527	46.3	ML5-40	50.602	50.302	0.000	Open Manhole	1050
ML5-16.002	11.729	244.4	ML5-43	51.450	49.054	2.096	Open Manhole	1050
ML5-18.000	70.308	160.2	ML5-42	51.889	51.589	0.000	Open Manhole	10
ML5-18.001	70.293	160.1	ML5-43	51.450	51.150	0.000	Open Manhole	1050

PIPELINE SCHEDULES for SWS-ML05 New

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)
ML5-15.002	o	300	ML5-43	51.450	49.054	2.096	Open Manhole	1050
ML5-15.003	o	300	ML5-44	51.585	48.938	2.347	Open Manhole	1200
ML5-14.002	o	525	ML5-45	50.010	48.285	1.200	Open Manhole	1500
ML5-19.000	\/	-1	ML5-46	52.019	51.819	0.000	Open Manhole	10
ML5-19.001	o	225	ML5-47	49.981	48.956	0.800	Open Manhole	1500
ML5-1.006	o	600	ML5-48	50.332	48.168	1.564	Open Manhole	1500
ML5-20.000	\/	-1	ML5-49	49.981	49.781	0.000	Open Manhole	10
ML5-20.001	o	300	ML5-50	48.133	46.633	1.200	Open Manhole	1500
ML5-1.007	o	600	ML5-51	48.480	46.249	1.631	Open Manhole	1800
ML5-21.000	\/	-1	ML5-52	50.010	49.810	0.000	Open Manhole	10
ML5-21.001	\/	-1	ML5-53	48.133	47.933	0.000	Open Manhole	10
ML5-21.002	o	300	ML5-54	46.331	45.030	1.001	Open Manhole	1500
ML5-22.000	\/	-1	ML5-55	48.133	47.933	0.000	Open Manhole	10
ML5-22.001	o	225	ML5-56	46.305	45.105	0.975	Open Manhole	1500
ML5-1.008	o	600	ML5-57	46.625	44.627	1.398	Open Manhole	1800
ML5-23.000	\/	-1	ML5-58	46.331	46.131	0.000	Open Manhole	10
ML5-24.000	1 _/	300	ML5-59	52.150	51.953	-0.103	Open Manhole	10
ML5-24.001	1 _/	300	ML5-60	50.911	50.611	0.000	Open Manhole	10
ML5-24.002	o	225	ML5-61	49.049	47.624	1.200	Open Manhole	1050
ML5-24.003	o	225	ML5-62	49.386	47.574	1.587	Open Manhole	1500
ML5-25.000	1 _/	300	ML5-63	52.431	52.131	0.000	Open Manhole	10
ML5-25.001	1 _/	300	ML5-64	50.892	50.592	0.000	Open Manhole	10
ML5-24.004	o	300	ML5-65	49.411	47.469	1.642	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)
ML5-15.002	8.994	77.5	ML5-44	51.585	48.938	2.347	Open Manhole	1200
ML5-15.003	72.532	169.5	ML5-45	50.010	48.510	1.200	Open Manhole	1500
ML5-14.002	14.744	351.1	ML5-48	50.332	48.243	1.564	Open Manhole	1500
ML5-19.000	111.332	54.6	ML5-47	49.981	49.781	0.000	Open Manhole	1500
ML5-19.001	13.980	33.9	ML5-48	50.332	48.543	1.564	Open Manhole	1500
ML5-1.006	99.715	52.0	ML5-51	48.480	46.249	1.631	Open Manhole	1800
ML5-20.000	98.464	53.3	ML5-50	48.133	47.933	0.000	Open Manhole	1500
ML5-20.001	14.122	168.1	ML5-51	48.480	46.549	1.631	Open Manhole	1800
ML5-1.007	100.006	61.7	ML5-57	46.625	44.627	1.398	Open Manhole	1800
ML5-21.000	99.429	53.0	ML5-53	48.133	47.933	0.000	Open Manhole	10
ML5-21.001	97.566	54.1	ML5-54	46.331	46.131	0.000	Open Manhole	1500
ML5-21.002	15.439	149.9	ML5-57	46.625	44.927	1.398	Open Manhole	1800
ML5-22.000	95.790	52.4	ML5-56	46.305	46.105	0.000	Open Manhole	1500
ML5-22.001	14.814	143.8	ML5-57	46.625	45.002	1.398	Open Manhole	1800
ML5-1.008	99.914	50.4	ML5-69	44.773	42.646	1.527	Open Manhole	2100
ML5-23.000	98.114	53.8	ML5-66	44.506	44.306	0.000	Open Manhole	1500
ML5-24.000	79.945	59.6	ML5-60	50.911	50.611	0.000	Open Manhole	10
ML5-24.001	80.103	43.0	ML5-61	49.049	48.749	0.000	Open Manhole	1050
ML5-24.002	7.525	150.5	ML5-62	49.386	47.574	1.587	Open Manhole	1500
ML5-24.003	4.628	154.3	ML5-65	49.411	47.544	1.642	Open Manhole	1200
ML5-25.000	84.540	54.9	ML5-64	50.892	50.592	0.000	Open Manhole	10
ML5-25.001	75.062	50.7	ML5-65	49.411	49.111	0.000	Open Manhole	1200
ML5-24.004	77.577	17.4	ML5-66	44.506	43.006	1.200	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML05 New

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)
ML5-23.001	o	525	ML5-66	44.506	42.781	1.200	Open Manhole	1500
ML5-26.000	\/	-1	ML5-67	46.305	46.105	0.000	Open Manhole	10
ML5-26.001	o	225	ML5-68	44.479	43.275	0.979	Open Manhole	1500
ML5-1.009	o	750	ML5-69	44.773	42.496	1.527	Open Manhole	2100
ML5-27.000	\/	-1	ML5-70	44.479	44.279	0.000	Open Manhole	10
ML5-27.001	5 \/	150	ML5-71	43.864	43.714	0.000	Open Manhole	10
ML5-27.002	o	450	ML5-72	42.498	41.348	0.700	Open Manhole	1500
ML5-28.000	\/	-1	ML5-73	44.706	44.506	0.000	Open Manhole	10
ML5-28.001	5 \/	150	ML5-74	43.996	43.846	0.000	Open Manhole	10
ML5-28.002	o	600	ML5-75	42.283	40.983	0.700	Open Manhole	1500
ML5-1.010	o	825	ML5-76	42.720	40.695	1.200	Open Manhole	2100
ML5-29.000	\/	-1	ML5-77	42.498	42.298	0.000	Open Manhole	10
ML5-29.001	o	225	ML5-78	42.092	41.167	0.700	Open Manhole	1500
ML5-1.011	o	825	ML5-79	42.220	40.195	1.200	Open Manhole	2100
ML5-30.000	5 \/	150	ML5-80	42.220	42.070	0.000	Junction	
ML5-1.012	o	900	ML5-81	41.676	39.895	0.881	Open Manhole	1800
ML5-1.013	o	900	ML5-82	41.300	39.600	0.800	Open Manhole	1800
ML5-31.000	\/	-1	ML5-83	41.682	41.482	0.000	Open Manhole	10
ML5-31.001	\/	-1	ML5-84	41.241	41.041	0.000	Open Manhole	10
ML5-32.000	\/	-1	ML5-85	42.283	42.083	0.000	Open Manhole	10
ML5-32.001	\/	-1	ML5-86	41.799	41.599	0.000	Open Manhole	10
ML5-31.002	o	525	ML5-87	41.058	39.953	0.580	Open Manhole	1500
ML5-33.000	5 \/	150	ML5-88	41.835	41.685	0.000	Open Manhole	10

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)
ML5-23.001	15.563	259.4	ML5-69	44.773	42.721	1.527	Open Manhole	2100
ML5-26.000	97.002	53.1	ML5-68	44.479	44.279	0.000	Open Manhole	1500
ML5-26.001	15.661	61.7	ML5-69	44.773	43.021	1.527	Open Manhole	2100
ML5-1.009	111.072	64.4	ML5-76	42.720	40.770	1.200	Open Manhole	2100
ML5-27.000	33.362	54.2	ML5-71	43.864	43.664	0.000	Open Manhole	10
ML5-27.001	78.532	57.5	ML5-72	42.498	42.348	0.000	Open Manhole	1500
ML5-27.002	14.857	53.4	ML5-76	42.720	41.070	1.200	Open Manhole	2100
ML5-28.000	31.905	44.9	ML5-74	43.996	43.796	0.000	Open Manhole	10
ML5-28.001	81.080	47.3	ML5-75	42.283	42.133	0.000	Open Manhole	1500
ML5-28.002	14.937	237.1	ML5-76	42.720	40.920	1.200	Open Manhole	2100
ML5-1.010	36.404	72.8	ML5-79	42.220	40.195	1.200	Open Manhole	2100
ML5-29.000	43.374	106.8	ML5-78	42.092	41.892	0.000	Open Manhole	1500
ML5-29.001	11.902	32.0	ML5-79	42.220	40.795	1.200	Open Manhole	2100
ML5-1.011	91.823	306.1	ML5-81	41.676	39.895	0.956	Open Manhole	1800
ML5-30.000	91.310	167.8	ML5-81	41.676	41.526	0.000	Open Manhole	1800
ML5-1.012	32.824	111.3	ML5-82	41.300	39.600	0.800	Open Manhole	1800
ML5-1.013	40.045	160.2	ML5-AB	41.300	39.350	1.050	Open Manhole	2100
ML5-31.000	44.955	101.9	ML5-84	41.241	41.041	0.000	Open Manhole	10
ML5-31.001	54.542	298.0	ML5-87	41.058	40.858	0.000	Open Manhole	1500
ML5-32.000	34.581	71.4	ML5-86	41.799	41.599	0.000	Open Manhole	10
ML5-32.001	100.026	135.0	ML5-87	41.058	40.858	0.000	Open Manhole	1500
ML5-31.002	12.782	140.5	ML5-108	41.673	39.862	1.286	Open Manhole	1800
ML5-33.000	52.256	322.6	ML5-108	41.673	41.523	0.000	Open Manhole	1800

PIPELINE SCHEDULES for SWS-ML05 New

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)
ML5-34.000	5 \/	150	ML5-89	48.978	48.828	0.000	Open Manhole	10
ML5-34.001	o	300	ML5-90	48.821	47.321	1.200	Open Manhole	1050
ML5-35.000	5 \/	150	ML5-91	48.963	48.813	0.000	Open Manhole	10
ML5-34.002	o	300	ML5-92	48.136	46.636	1.200	Open Manhole	1050
ML5-36.000	5 \/	150	ML5-93	48.136	47.986	0.000	Open Manhole	10
ML5-34.003	o	300	ML5-94	46.913	45.413	1.200	Open Manhole	1050
ML5-37.000	5 \/	150	ML5-95	46.913	46.763	0.000	Open Manhole	10
ML5-34.004	o	375	ML5-96	45.149	43.574	1.200	Open Manhole	1500
ML5-38.000	5 \/	150	ML5-97	45.149	44.999	0.000	Open Manhole	10
ML5-34.005	o	450	ML5-98	43.110	41.460	1.200	Open Manhole	1500
ML5-39.000	\/	-1	ML5-99	48.368	48.168	0.000	Open Manhole	10
ML5-39.001	\/	-1	ML5-100	47.947	47.747	0.000	Open Manhole	10
ML5-39.002	\/	-1	ML5-101	46.992	46.792	0.000	Open Manhole	1200
ML5-39.003	\/	-1	ML5-102	45.486	45.286	0.000	Open Manhole	10
ML5-39.004	\/	-1	ML5-103	43.493	43.293	0.000	Open Manhole	10
ML5-39.005	o	525	ML5-104	41.682	40.457	0.700	Open Manhole	1500
ML5-34.006	o	600	ML5-105	42.285	40.332	1.353	Open Manhole	1800
ML5-40.000	5 \/	150	ML5-106	43.110	42.960	0.000	Open Manhole	10
ML5-34.007	o	600	ML5-107	41.835	40.035	1.200	Open Manhole	1800
ML5-31.003	o	750	ML5-108	41.673	39.862	1.061	Open Manhole	1800
ML5-41.000	o	225	ML5-109	48.317	46.764	1.328	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)
ML5-34.000	76.378	486.5	ML5-90	48.821	48.671	0.000	Open Manhole	1050
ML5-34.001	100.350	146.5	ML5-92	48.136	46.636	1.200	Open Manhole	1050
ML5-35.000	99.489	120.3	ML5-92	48.136	47.986	0.000	Open Manhole	1050
ML5-34.002	99.979	81.7	ML5-94	46.913	45.413	1.200	Open Manhole	1050
ML5-36.000	99.369	81.3	ML5-94	46.913	46.763	0.000	Open Manhole	1050
ML5-34.003	100.005	56.7	ML5-96	45.149	43.649	1.200	Open Manhole	1500
ML5-37.000	99.356	56.3	ML5-96	45.149	44.999	0.000	Open Manhole	1500
ML5-34.004	100.006	49.0	ML5-98	43.110	41.535	1.200	Open Manhole	1500
ML5-38.000	99.501	48.8	ML5-98	43.110	42.960	0.000	Open Manhole	1500
ML5-34.005	52.660	53.8	ML5-105	42.285	40.482	1.353	Open Manhole	1800
ML5-39.000	123.788	294.0	ML5-100	47.947	47.747	0.000	Open Manhole	10
ML5-39.001	100.035	104.7	ML5-101	46.992	46.792	0.000	Open Manhole	1200
ML5-39.002	100.032	66.4	ML5-102	45.486	45.286	0.000	Open Manhole	10
ML5-39.003	100.028	50.2	ML5-103	43.493	43.293	0.000	Open Manhole	10
ML5-39.004	100.018	55.2	ML5-104	41.682	41.482	0.000	Open Manhole	1500
ML5-39.005	12.783	255.7	ML5-105	42.285	40.407	1.353	Open Manhole	1800
ML5-34.006	47.067	158.5	ML5-107	41.835	40.035	1.200	Open Manhole	1800
ML5-40.000	99.094	77.7	ML5-107	41.835	41.685	0.000	Open Manhole	1800
ML5-34.007	52.905	305.8	ML5-108	41.673	39.862	1.211	Open Manhole	1800
ML5-31.003	11.817	166.9	ML5-114	42.073	39.791	1.532	Open Manhole	1800
ML5-41.000	101.491	81.3	ML5-110	47.070	45.515	1.330	Open Manhole	1200

PIPELINE SCHEDULES for SWS-ML05 New

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)
ML5-41.001	o	225	ML5-110	47.070	45.515	1.330	Open Manhole	1200
ML5-41.002	o	225	ML5-111	45.318	43.766	1.327	Open Manhole	1200
ML5-41.003	o	225	ML5-112	43.281	41.726	1.330	Open Manhole	1200
ML5-41.004	o	300	ML5-113	42.110	40.371	1.439	Open Manhole	1800
ML5-31.004	o	825	ML5-114	42.073	39.791	1.457	Open Manhole	1800
ML5-31.005	o	825	ML5-115	41.300	39.600	0.875	Open Manhole	1800
ML5-42.000	1 _/	300	ML5-116	49.285	48.985	0.000	Open Manhole	10
ML5-42.001	1 _/	300	ML5-117	47.816	47.516	0.000	Open Manhole	10
ML5-43.000	1 _/	300	ML5-118	45.807	45.507	0.000	Open Manhole	10
ML5-43.001	1 _/	300	ML5-119	44.647	44.347	0.000	Junction	
ML5-42.002	1 _/	300	ML5-120	44.237	43.937	0.000	Open Manhole	10
ML5-42.003	o	300	ML5-121	43.946	42.446	1.200	Open Manhole	1050
ML5-42.004	o	300	ML5-122	41.300	39.600	1.400	Junction	
ML5-1.014	o	450	ML5-AB	41.300	39.300	1.550	Open Manhole	2100
ML5-1.015	o	450	ML5-123	41.300	39.163	1.687	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)
ML5-41.001	99.193	56.7	ML5-111	45.318	43.766	1.327	Open Manhole	1200
ML5-41.002	101.027	49.5	ML5-112	43.281	41.726	1.330	Open Manhole	1200
ML5-41.003	99.869	78.0	ML5-113	42.110	40.446	1.439	Open Manhole	1800
ML5-41.004	51.195	78.2	ML5-114	42.073	39.716	2.057	Open Manhole	1800
ML5-31.004	20.779	108.8	ML5-115	41.300	39.600	0.875	Open Manhole	1800
ML5-31.005	40.787	163.1	ML5-AB	41.300	39.350	1.125	Open Manhole	2100
ML5-42.000	95.580	65.1	ML5-117	47.816	47.516	0.000	Open Manhole	10
ML5-42.001	110.804	31.0	ML5-120	44.237	43.937	0.000	Open Manhole	10
ML5-43.000	32.110	27.7	ML5-119	44.647	44.347	0.000	Junction	
ML5-43.001	24.131	58.9	ML5-120	44.237	43.937	0.000	Open Manhole	10
ML5-42.002	11.871	40.8	ML5-121	43.946	43.646	0.000	Open Manhole	1050
ML5-42.003	26.915	9.5	ML5-122	41.300	39.600	1.400	Junction	
ML5-42.004	159.848	319.7	ML5-AB	41.300	39.100	1.900	Open Manhole	2100
ML5-1.014	13.718	100.0	ML5-123	41.300	39.163	1.687	Open Manhole	1500
ML5-1.015	15.353	7.3	ML5-Outfall	38.300	37.054	0.796	Open Manhole	0

Free Flowing Outfall Details for SWS-ML05 New

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML5-1.015	ML5-Outfall	38.300	37.054	0.000	0	0

Online Controls for SWS-ML05 New

Hydro-Brake® Optimum Manhole: ML5-AB, DS/PN: ML5-1.014, Volume (m³): 63.1

Unit Reference	MD-SCU-0127-1050-0390-1050	Sump Available	Yes
Design Head (m)	0.390	Diameter (mm)	127
Design Flow (l/s)	10.5	Invert Level (m)	39.300
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	150
Objective	Linear discharge profile	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.390	10.5	Kick-Flo®	0.191	7.5
Flush-Flo™	0.158	7.6	Mean Flow over Head Range	-	6.8

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)	Depth (m)	Flow (l/s)
0.100	5.0	0.600	12.9	1.600	20.5	2.600	25.9	5.000	35.4	7.500	43.5
0.200	7.7	0.800	14.7	1.800	21.7	3.000	27.7	5.500	37.2	8.000	44.9
0.300	9.3	1.000	16.4	2.000	22.8	3.500	29.9	6.000	38.8	8.500	46.3
0.400	10.6	1.200	17.9	2.200	23.9	4.000	31.6	6.500	40.4	9.000	47.7
0.500	11.8	1.400	19.2	2.400	24.9	4.500	33.6	7.000	42.0	9.500	49.0

Storage Structures for SWS-ML05 New

Tank or Pond Manhole: ML5-AB, DS/PN: ML5-1.014

Invert Level (m) 39.300

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	3954.8	0.300	4860.8	1.600	6553.7	1.601	6787.3	2.000	7331.7

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 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	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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
Climate Change (%)	20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-1.000	ML5-01	15 minute 1 year Winter I+20%	54.949	54.839	-0.110	0.000	0.19	0.000	0.2	23.6	FLOOD RISK
ML5-1.001	ML5-02	15 minute 1 year Winter I+20%	54.715	53.411	-0.104	0.000	0.55	0.205	1.1	23.2	OK
ML5-2.000	ML5-03	15 minute 1 year Winter I+20%	54.949	54.839	-0.110	0.000	0.19	0.000	0.2	23.5	FLOOD RISK
ML5-2.001	ML5-04	15 minute 1 year Winter I+20%	54.710	53.406	-0.104	0.000	0.55	0.206	1.1	23.2	OK
ML5-1.002	ML5-05	15 minute 1 year Winter I+20%	55.125	53.075	-0.320	0.000	0.18	0.221	1.2	46.0	OK
ML5-3.000	ML5-06	15 minute 1 year Winter I+20%	54.715	54.577	-0.138	0.000	0.10	0.000	0.2	19.5	FLOOD RISK
ML5-3.001	ML5-07	15 minute 1 year Winter I+20%	54.178	52.874	-0.104	0.000	0.56	0.206	0.9	19.7	OK
ML5-4.000	ML5-09	15 minute 1 year Winter I+20%	54.710	54.573	-0.137	0.000	0.10	0.000	0.2	18.4	FLOOD RISK
ML5-4.001	ML5-09A	15 minute 1 year Winter I+20%	54.252	52.923	-0.129	0.000	0.38	0.161	1.2	18.6	OK
ML5-1.003	ML5-08	15 minute 1 year Winter I+20%	54.609	52.596	-0.302	0.000	0.23	0.667	1.8	79.2	OK
ML5-5.000	ML5-Dummy 09	15 minute 1 year Summer I+20%	54.710	54.510	-0.100	0.000	0.00	0.000	0.0	0.0	OK
ML5-5.001	ML5-10	15 minute 1 year Winter I+20%	54.121	54.036	-0.085	0.000	0.11	0.002	0.7	14.3	FLOOD RISK
ML5-5.002	ML5-11	15 minute 1 year Winter I+20%	53.411	53.263	-0.148	0.000	0.07	0.012	0.3	17.7	FLOOD RISK
ML5-6.000	ML5-12	15 minute 1 year Winter I+20%	53.321	53.075	-0.246	0.000	0.04	0.000	0.2	4.4	FLOOD RISK
ML5-6.001	ML5-13	15 minute 1 year Winter I+20%	52.490	51.482	-0.308	0.000	0.04	0.070	0.4	4.3	OK
ML5-5.003	ML5-14	15 minute 1 year Winter I+20%	53.221	51.476	-0.267	0.000	0.18	0.259	0.8	22.0	OK
ML5-7.000	ML5-15	15 minute 1 year Winter I+20%	54.378	54.304	-0.074	0.000	0.16	0.000	0.9	23.8	FLOOD RISK
ML5-7.001	ML5-16	15 minute 1 year Winter I+20%	53.415	53.282	-0.133	0.000	0.11	0.015	0.3	27.5	FLOOD RISK
ML5-8.000	ML5-17	15 minute 1 year Summer I+20%	58.698	57.284	-1.414	0.000	0.00	0.000	0.0	0.0	OK
ML5-9.000	ML5-18	15 minute 1 year Winter I+20%	57.780	57.486	-0.294	0.000	0.04	0.000	0.1	2.7	FLOOD RISK
ML5-10.000	ML5-19	15 minute 1 year Winter I+20%	58.397	58.212	-0.185	0.000	0.16	0.000	0.3	12.4	FLOOD RISK
ML5-11.000	ML5-20	15 minute 1 year Winter I+20%	58.032	57.718	-0.314	0.000	0.11	0.000	0.2	16.4	OK
ML5-9.001	ML5-21	15 minute 1 year Winter I+20%	57.226	55.633	-0.060	0.000	0.87	0.258	1.0	31.2	OK
ML5-8.001	ML5-22	15 minute 1 year Winter I+20%	56.590	55.514	-1.076	0.000	0.02	0.341	0.5	44.1	OK
ML5-8.002	ML5-23	15 minute 1 year Winter I+20%	54.477	53.026	-0.251	0.000	0.24	0.133	1.4	42.9	OK
ML5-8.003	ML5-24	15 minute 1 year Winter I+20%	53.469	52.058	-0.211	0.000	0.40	0.530	0.9	42.8	OK
ML5-7.002	ML5-25	15 minute 1 year Winter I+20%	53.224	51.942	-0.257	0.000	0.22	0.375	2.1	64.5	OK
ML5-1.004	ML5-26	15 minute 1 year Winter I+20%	53.612	51.344	-0.302	0.000	0.37	1.069	1.9	160.3	OK
ML5-12.000	ML5-27	15 minute 1 year Winter I+20%	53.421	53.270	-0.151	0.000	0.07	0.000	0.3	20.3	FLOOD RISK
ML5-13.000	ML5-28	15 minute 1 year Winter I+20%	52.525	52.318	-0.207	0.000	0.11	0.000	0.1	5.2	FLOOD RISK
ML5-13.001	ML5-29	15 minute 1 year Winter I+20%	52.100	50.787	-0.138	0.000	0.17	0.020	0.4	5.2	OK
ML5-12.001	ML5-30	15 minute 1 year Winter I+20%	52.019	50.781	-0.099	0.000	0.59	0.314	1.1	24.9	OK
ML5-1.005	ML5-31	15 minute 1 year Winter I+20%	52.180	50.310	-0.417	0.000	0.20	0.485	2.5	179.7	OK
ML5-14.000	ML5-32	15 minute 1 year Winter I+20%	53.224	53.081	-0.143	0.000	0.07	0.000	0.3	19.4	FLOOD RISK
ML5-14.001	ML5-33	15 minute 1 year Winter I+20%	51.791	51.660	-0.131	0.000	0.12	0.341	0.4	38.2	FLOOD RISK
ML5-15.000	ML5-34	15 minute 1 year Winter I+20%	52.351	52.088	-0.263	0.000	0.02	0.000	0.1	1.5	FLOOD RISK
ML5-15.001	ML5-35	15 minute 1 year Winter I+20%	51.737	51.500	-0.237	0.000	0.06	0.095	0.1	2.6	FLOOD RISK
ML5-16.000	ML5-36	15 minute 1 year Winter I+20%	55.327	55.107	-0.220	0.000	0.09	0.000	0.4	11.7	FLOOD RISK
ML5-16.001	ML5-37	15 minute 1 year Winter I+20%	52.064	51.730	-0.334	0.000	0.08	0.028	0.3	19.1	OK
ML5-17.000	ML5-38	15 minute 1 year Winter I+20%	52.247	52.065	-0.182	0.000	0.15	0.000	0.1	4.2	FLOOD RISK
ML5-17.001	ML5-39	15 minute 1 year Winter I+20%	52.124	51.909	-0.215	0.000	0.10	0.843	0.3	9.3	FLOOD RISK
ML5-16.002	ML5-40	15 minute 1 year Winter I+20%	50.602	49.252	-0.150	0.000	0.50	0.198	0.8	28.4	OK
ML5-18.000	ML5-41	15 minute 1 year Winter I+20%	52.328	52.067	-0.261	0.000	0.02	0.000	0.1	1.2	FLOOD RISK
ML5-18.001	ML5-42	15 minute 1 year Winter I+20%	51.889	51.645	-0.244	0.000	0.05	0.151	0.1	2.5	FLOOD RISK
ML5-15.002	ML5-43	15 minute 1 year Winter I+20%	51.450	49.184	-0.170	0.000	0.39	0.384	1.1	33.4	OK
ML5-15.003	ML5-44	15 minute 1 year Winter I+20%	51.585	49.071	-0.167	0.000	0.41	0.260	1.1	33.5	OK
ML5-14.002	ML5-45	15 minute 1 year Winter I+20%	50.010	48.480	-0.330	0.000	0.29	0.335	1.0	69.6	OK
ML5-19.000	ML5-46	15 minute 1 year Winter I+20%	52.019	51.883	-0.136	0.000	0.10	0.000	0.4	32.2	FLOOD RISK
ML5-19.001	ML5-47	15 minute 1 year Winter I+20%	49.981	49.051	-0.130	0.000	0.36	0.158	2.1	32.6	OK
ML5-1.006	ML5-48	15 minute 1 year Winter I+20%	50.332	48.397	-0.371	0.000	0.31	1.269	2.8	276.2	OK
ML5-20.000	ML5-49	15 minute 1 year Winter I+20%	49.981	49.841	-0.140	0.000	0.09	0.000	0.4	29.5	FLOOD RISK
ML5-20.001	ML5-50	15 minute 1 year Winter I+20%	48.133	46.769	-0.164	0.000	0.41	0.231	1.0	29.2	OK
ML5-1.007	ML5-51	15 minute 1 year Winter I+20%	48.480	46.500	-0.349	0.000	0.36	1.235	2.7	296.6	OK

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-21.000	ML5-52	15 minute 1 year Winter I+20%	50.010	49.863	-0.147	0.000	0.06	0.000	0.3	20.5	FLOOD RISK
ML5-21.001	ML5-53	15 minute 1 year Winter I+20%	48.133	48.003	-0.130	0.000	0.12	0.253	0.4	39.8	FLOOD RISK
ML5-21.002	ML5-54	15 minute 1 year Winter I+20%	46.331	45.180	-0.150	0.000	0.49	0.257	1.1	39.5	OK
ML5-22.000	ML5-55	15 minute 1 year Winter I+20%	48.133	47.992	-0.141	0.000	0.09	0.000	0.4	28.8	FLOOD RISK
ML5-22.001	ML5-56	15 minute 1 year Winter I+20%	46.305	45.241	-0.089	0.000	0.66	0.231	1.2	28.4	OK
ML5-1.008	ML5-57	15 minute 1 year Winter I+20%	46.625	44.887	-0.340	0.000	0.39	1.431	3.0	350.2	OK
ML5-23.000	ML5-58	15 minute 1 year Winter I+20%	46.331	46.191	-0.140	0.000	0.09	0.000	0.4	29.3	FLOOD RISK
ML5-24.000	ML5-59	15 minute 1 year Winter I+20%	52.150	52.031	-0.119	0.000	0.16	0.000	0.2	6.1	FLOOD RISK
ML5-24.001	ML5-60	15 minute 1 year Winter I+20%	50.911	50.709	-0.202	0.000	0.12	0.101	0.3	12.2	FLOOD RISK
ML5-24.002	ML5-61	15 minute 1 year Winter I+20%	49.049	47.721	-0.128	0.000	0.39	0.102	0.7	12.2	OK
ML5-24.003	ML5-62	15 minute 1 year Winter I+20%	49.386	47.674	-0.125	0.000	0.41	0.238	0.7	12.1	OK
ML5-25.000	ML5-63	15 minute 1 year Winter I+20%	52.431	52.166	-0.265	0.000	0.02	0.000	0.2	1.7	FLOOD RISK
ML5-25.001	ML5-64	15 minute 1 year Winter I+20%	50.892	50.635	-0.257	0.000	0.03	0.038	0.2	2.8	FLOOD RISK
ML5-24.004	ML5-65	15 minute 1 year Winter I+20%	49.411	47.516	-0.253	0.000	0.06	0.058	2.1	14.9	OK
ML5-23.001	ML5-66	15 minute 1 year Winter I+20%	44.506	42.929	-0.377	0.000	0.17	0.253	0.9	43.4	OK
ML5-26.000	ML5-67	15 minute 1 year Winter I+20%	46.305	46.166	-0.139	0.000	0.09	0.000	0.4	30.0	FLOOD RISK
ML5-26.001	ML5-68	15 minute 1 year Winter I+20%	44.479	43.382	-0.118	0.000	0.45	0.180	1.6	29.7	OK
ML5-1.009	ML5-69	15 minute 1 year Winter I+20%	44.773	42.768	-0.478	0.000	0.28	1.092	2.8	400.1	OK
ML5-27.000	ML5-70	15 minute 1 year Winter I+20%	44.479	44.309	-0.170	0.000	0.03	0.000	0.2	8.9	FLOOD RISK
ML5-27.001	ML5-71	15 minute 1 year Winter I+20%	43.864	43.787	-0.077	0.000	0.14	0.697	1.0	25.1	FLOOD RISK
ML5-27.002	ML5-72	15 minute 1 year Winter I+20%	42.498	41.436	-0.362	0.000	0.08	0.168	1.2	25.2	OK
ML5-28.000	ML5-73	15 minute 1 year Winter I+20%	44.706	44.538	-0.168	0.000	0.03	0.000	0.3	11.1	FLOOD RISK
ML5-28.001	ML5-74	15 minute 1 year Winter I+20%	43.996	43.924	-0.072	0.000	0.18	0.655	1.1	33.6	FLOOD RISK
ML5-28.002	ML5-75	15 minute 1 year Winter I+20%	42.283	41.114	-0.469	0.000	0.11	0.253	0.7	33.4	OK
ML5-1.010	ML5-76	15 minute 1 year Winter I+20%	42.720	41.020	-0.500	0.000	0.33	2.096	2.3	439.2	OK
ML5-29.000	ML5-77	15 minute 1 year Winter I+20%	42.498	42.338	-0.160	0.000	0.05	0.000	0.2	10.8	FLOOD RISK
ML5-29.001	ML5-78	15 minute 1 year Winter I+20%	42.092	41.222	-0.170	0.000	0.14	0.088	1.4	10.7	OK
ML5-1.011	ML5-79	15 minute 1 year Winter I+20%	42.220	40.632	-0.388	0.000	0.53	5.129	1.5	431.2	OK
ML5-30.000	ML5-80	15 minute 1 year Winter I+20%	42.220	42.145	-0.075	0.000	0.15	0.070	0.6	15.7	FLOOD RISK*
ML5-1.012	ML5-81	15 minute 1 year Winter I+20%	41.676	40.265	-0.530	0.000	0.36	11.500	1.8	435.6	OK
ML5-1.013	ML5-82	15 minute 1 year Winter I+20%	41.300	39.987	-0.513	0.000	0.39	5.227	1.7	434.5	OK
ML5-31.000	ML5-83	15 minute 1 year Winter I+20%	41.682	41.529	-0.153	0.000	0.06	0.000	0.2	13.9	FLOOD RISK
ML5-31.001	ML5-84	15 minute 1 year Winter I+20%	41.241	41.129	-0.112	0.000	0.19	0.620	0.2	26.3	FLOOD RISK
ML5-32.000	ML5-85	15 minute 1 year Winter I+20%	42.283	42.115	-0.168	0.000	0.03	0.000	0.2	8.6	FLOOD RISK
ML5-32.001	ML5-86	15 minute 1 year Winter I+20%	41.799	41.680	-0.119	0.000	0.16	0.397	0.3	33.2	FLOOD RISK
ML5-31.002	ML5-87	15 minute 1 year Winter I+20%	41.058	40.170	-0.308	0.000	0.24	0.375	0.9	58.7	OK
ML5-33.000	ML5-88	15 minute 1 year Summer I+20%	41.835	41.685	-0.150	0.000	0.00	0.000	0.0	0.0	OK
ML5-34.000	ML5-89	15 minute 1 year Winter I+20%	48.978	48.913	-0.065	0.000	0.22	0.000	0.4	13.0	FLOOD RISK
ML5-34.001	ML5-90	15 minute 1 year Winter I+20%	48.821	47.397	-0.224	0.000	0.13	0.079	0.9	12.1	OK
ML5-35.000	ML5-91	15 minute 1 year Winter I+20%	48.963	48.885	-0.078	0.000	0.14	0.000	0.7	17.0	FLOOD RISK
ML5-34.002	ML5-92	15 minute 1 year Winter I+20%	48.136	46.734	-0.202	0.000	0.23	0.220	1.4	27.3	OK
ML5-36.000	ML5-93	15 minute 1 year Winter I+20%	48.136	48.053	-0.083	0.000	0.12	0.000	0.8	16.9	FLOOD RISK
ML5-34.003	ML5-94	15 minute 1 year Winter I+20%	46.913	45.525	-0.188	0.000	0.29	0.208	1.8	41.5	OK
ML5-37.000	ML5-95	15 minute 1 year Winter I+20%	46.913	46.825	-0.088	0.000	0.10	0.000	0.9	16.8	FLOOD RISK
ML5-34.004	ML5-96	15 minute 1 year Winter I+20%	45.149	43.689	-0.260	0.000	0.20	0.231	2.0	54.8	OK
ML5-38.000	ML5-97	15 minute 1 year Winter I+20%	45.149	45.060	-0.089	0.000	0.09	0.000	0.9	17.0	FLOOD RISK
ML5-34.005	ML5-98	15 minute 1 year Winter I+20%	43.110	41.585	-0.325	0.000	0.17	0.261	1.9	68.6	OK
ML5-39.000	ML5-99	15 minute 1 year Winter I+20%	48.368	48.260	-0.108	0.000	0.16	0.000	0.2	23.0	FLOOD RISK
ML5-39.001	ML5-100	15 minute 1 year Winter I+20%	47.947	47.831	-0.116	0.000	0.15	1.704	0.3	36.1	FLOOD RISK
ML5-39.002	ML5-101	15 minute 1 year Winter I+20%	46.992	46.878	-0.114	0.000	0.16	0.709	0.4	48.4	FLOOD RISK
ML5-39.003	ML5-102	15 minute 1 year Winter I+20%	45.486	45.373	-0.113	0.000	0.17	0.398	0.5	58.1	FLOOD RISK
ML5-39.004	ML5-103	15 minute 1 year Winter I+20%	43.493	43.389	-0.104	0.000	0.21	0.333	0.5	69.5	FLOOD RISK
ML5-39.005	ML5-104	15 minute 1 year Winter I+20%	41.682	40.664	-0.318	0.000	0.33	0.357	0.9	69.6	OK
ML5-34.006	ML5-105	15 minute 1 year Winter I+20%	42.285	40.542	-0.390	0.000	0.27	0.773	1.4	126.3	OK
ML5-40.000	ML5-106	15 minute 1 year Winter I+20%	43.110	43.026	-0.084	0.000	0.11	0.000	0.8	16.6	FLOOD RISK
ML5-34.007	ML5-107	15 minute 1 year Winter I+20%	41.835	40.296	-0.339	0.000	0.39	2.708	1.2	134.7	OK
ML5-31.003	ML5-108	15 minute 1 year Winter I+20%	41.673	40.156	-0.456	0.000	0.32	6.211	1.2	188.9	OK
ML5-41.000	ML5-109	15 minute 1 year Winter I+20%	48.317	46.825	-0.164	0.000	0.15	0.048	1.0	7.7	OK
ML5-41.001	ML5-110	15 minute 1 year Winter I+20%	47.070	45.587	-0.153	0.000	0.21	0.114	1.2	12.9	OK
ML5-41.002	ML5-111	15 minute 1 year Winter I+20%	45.318	43.847	-0.144	0.000	0.27	0.116	1.4	17.3	OK
ML5-41.003	ML5-112	15 minute 1 year Winter I+20%	43.281	41.830	-0.121	0.000	0.43	0.146	1.3	22.1	OK
ML5-41.004	ML5-113	15 minute 1 year Winter I+20%	42.110	40.470	-0.201	0.000	0.23	0.241	1.2	24.6	OK
ML5-31.004	ML5-114	15 minute 1 year Winter I+20%	42.073	40.074	-0.542	0.000	0.26	2.966	1.3	212.9	OK
ML5-31.005	ML5-115	15 minute 1 year Winter I+20%	41.300	39.864	-0.561	0.000	0.22	2.168	1.4	212.1	OK
ML5-42.000	ML5-116	15 minute 1 year Winter I+20%	49.285	49.084	-0.201	0.000	0.11	0.000	0.3	8.8	FLOOD RISK
ML5-42.001	ML5-117	15 minute 1 year Winter I+20%	47.816	47.629	-0.187	0.000	0.14	0.155	0.4	16.1	FLOOD RISK
ML5-43.000	ML5-118	15 minute 1 year Winter I+20%	45.807	45.530	-0.277	0.000	0.01	0.000	0.2	1.3	FLOOD RISK
ML5-43.001	ML5-119	15 minute 1 year Winter I+20%	44.647	44.381	-0.266	0.000	0.02	0.036	0.2	1.7	FLOOD RISK*
ML5-42.002	ML5-120	15 minute 1 year Winter I+20%	44.237	44.056	-0.181	0.000	0.18	0.226	0.4	17.8	FLOOD RISK
ML5-42.003	ML5-121	15 minute 1 year Winter I+20%	43.946	42.491	-0.255	0.000	0.05	0.045	2.7	17.8	OK
ML5-42.004	ML5-122	15 minute 1 year Winter I+20%	41.300	39.709	-0.191	0.000	0.25	0.114	0.8	15.3	OK*
ML5-1.014	ML5-AB	2880 minute 1 year Winter I+20%	41.300	39.668	-0.082	0.000	0.05	1671.074	0.9	10.2	OK
ML5-1.015	ML5-123	2880 minute 1 year Winter I+20%	41.300	39.189	-0.423	0.000	0.01	0.058	2.5	10.2	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 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	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-1.000	ML5-01	15 minute 5 year Winter I+20%	54.949	54.865	-0.084	0.000	0.31	0.000	0.2	37.5	FLOOD RISK
ML5-1.001	ML5-02	15 minute 5 year Winter I+20%	54.715	53.456	-0.059	0.000	0.88	0.285	1.2	36.9	OK
ML5-2.000	ML5-03	15 minute 5 year Winter I+20%	54.949	54.865	-0.084	0.000	0.31	0.000	0.2	37.5	FLOOD RISK
ML5-2.001	ML5-04	15 minute 5 year Winter I+20%	54.710	53.452	-0.058	0.000	0.88	0.286	1.2	36.8	OK
ML5-1.002	ML5-05	15 minute 5 year Winter I+20%	55.125	53.111	-0.284	0.000	0.28	0.285	1.4	73.3	OK
ML5-3.000	ML5-06	15 minute 5 year Winter I+20%	54.715	54.594	-0.121	0.000	0.15	0.000	0.3	31.1	FLOOD RISK
ML5-3.001	ML5-07	15 minute 5 year Winter I+20%	54.178	52.920	-0.058	0.000	0.89	0.286	1.0	31.4	OK
ML5-4.000	ML5-09	15 minute 5 year Winter I+20%	54.710	54.590	-0.120	0.000	0.16	0.000	0.2	29.3	FLOOD RISK
ML5-4.001	ML5-09A	15 minute 5 year Winter I+20%	54.252	52.954	-0.098	0.000	0.60	0.216	1.3	29.6	OK
ML5-1.003	ML5-08	15 minute 5 year Winter I+20%	54.609	52.640	-0.258	0.000	0.37	1.015	2.0	126.1	OK
ML5-5.000	ML5-Dummy 09	15 minute 5 year Summer I+20%	54.710	54.510	-0.100	0.000	0.00	0.000	0.0	0.0	OK
ML5-5.001	ML5-10	15 minute 5 year Winter I+20%	54.121	54.049	-0.072	0.000	0.17	0.002	0.8	22.4	FLOOD RISK
ML5-5.002	ML5-11	15 minute 5 year Winter I+20%	53.411	53.278	-0.133	0.000	0.11	0.016	0.3	28.2	FLOOD RISK
ML5-6.000	ML5-12	15 minute 5 year Winter I+20%	53.321	53.092	-0.229	0.000	0.07	0.000	0.3	6.9	FLOOD RISK
ML5-6.001	ML5-13	15 minute 5 year Winter I+20%	52.490	51.509	-0.281	0.000	0.06	0.100	0.4	6.9	OK
ML5-5.003	ML5-14	15 minute 5 year Winter I+20%	53.221	51.505	-0.238	0.000	0.29	0.365	1.0	34.9	OK
ML5-7.000	ML5-15	15 minute 5 year Winter I+20%	54.378	54.318	-0.060	0.000	0.25	0.000	1.0	37.2	FLOOD RISK
ML5-7.001	ML5-16	15 minute 5 year Winter I+20%	53.415	53.299	-0.116	0.000	0.17	0.020	0.3	42.8	FLOOD RISK
ML5-8.000	ML5-17	15 minute 5 year Summer I+20%	58.698	57.284	-1.414	0.000	0.00	0.000	0.0	0.0	OK
ML5-9.000	ML5-18	15 minute 5 year Winter I+20%	57.780	57.506	-0.274	0.000	0.07	0.000	0.1	4.3	FLOOD RISK
ML5-10.000	ML5-19	15 minute 5 year Winter I+20%	58.397	58.247	-0.150	0.000	0.26	0.000	0.3	19.8	FLOOD RISK
ML5-11.000	ML5-20	15 minute 5 year Winter I+20%	58.032	57.759	-0.273	0.000	0.17	0.000	0.2	26.1	FLOOD RISK
ML5-9.001	ML5-21	15 minute 5 year Winter I+20%	57.226	55.756	0.063	0.000	1.39	0.458	1.3	49.9	SURCHARGED
ML5-8.001	ML5-22	15 minute 5 year Winter I+20%	56.590	55.575	-1.015	0.000	0.03	0.530	0.5	70.3	OK
ML5-8.002	ML5-23	15 minute 5 year Winter I+20%	54.477	53.062	-0.215	0.000	0.38	0.173	1.5	68.2	OK
ML5-8.003	ML5-24	15 minute 5 year Winter I+20%	53.469	52.111	-0.158	0.000	0.63	0.842	1.0	67.8	OK
ML5-7.002	ML5-25	15 minute 5 year Winter I+20%	53.224	51.975	-0.224	0.000	0.34	0.543	2.4	100.0	OK
ML5-1.004	ML5-26	15 minute 5 year Winter I+20%	53.612	51.413	-0.233	0.000	0.58	1.864	2.1	253.0	OK
ML5-12.000	ML5-27	15 minute 5 year Winter I+20%	53.421	53.286	-0.135	0.000	0.10	0.000	0.3	32.2	FLOOD RISK
ML5-13.000	ML5-28	15 minute 5 year Winter I+20%	52.525	52.346	-0.179	0.000	0.18	0.000	0.2	8.3	FLOOD RISK
ML5-13.001	ML5-29	15 minute 5 year Winter I+20%	52.100	50.836	-0.089	0.000	0.28	0.033	0.4	8.3	OK
ML5-12.001	ML5-30	15 minute 5 year Winter I+20%	52.019	50.828	-0.052	0.000	0.93	0.461	1.2	39.5	OK
ML5-1.005	ML5-31	15 minute 5 year Winter I+20%	52.180	50.360	-0.367	0.000	0.32	0.811	2.8	283.7	OK
ML5-14.000	ML5-32	15 minute 5 year Winter I+20%	53.224	53.096	-0.128	0.000	0.11	0.000	0.3	30.9	FLOOD RISK
ML5-14.001	ML5-33	15 minute 5 year Winter I+20%	51.791	51.680	-0.111	0.000	0.19	0.445	0.4	60.9	FLOOD RISK
ML5-15.000	ML5-34	15 minute 5 year Winter I+20%	52.351	52.099	-0.252	0.000	0.03	0.000	0.2	2.4	FLOOD RISK
ML5-15.001	ML5-35	15 minute 5 year Winter I+20%	51.737	51.519	-0.218	0.000	0.09	0.126	0.1	4.2	FLOOD RISK
ML5-16.000	ML5-36	15 minute 5 year Winter I+20%	55.327	55.132	-0.195	0.000	0.14	0.000	0.4	18.6	FLOOD RISK
ML5-16.001	ML5-37	15 minute 5 year Winter I+20%	52.064	51.766	-0.298	0.000	0.13	0.037	0.3	30.4	FLOOD RISK
ML5-17.000	ML5-38	15 minute 5 year Winter I+20%	52.247	52.100	-0.147	0.000	0.24	0.000	0.1	6.6	FLOOD RISK
ML5-17.001	ML5-39	15 minute 5 year Winter I+20%	52.124	51.934	-0.190	0.000	0.15	1.201	0.3	14.5	FLOOD RISK
ML5-16.002	ML5-40	15 minute 5 year Winter I+20%	50.602	49.305	-0.097	0.000	0.79	0.270	0.9	45.0	OK
ML5-18.000	ML5-41	15 minute 5 year Winter I+20%	52.328	52.080	-0.248	0.000	0.04	0.000	0.1	2.0	FLOOD RISK
ML5-18.001	ML5-42	15 minute 5 year Winter I+20%	51.889	51.663	-0.226	0.000	0.08	0.202	0.1	3.9	FLOOD RISK
ML5-15.002	ML5-43	15 minute 5 year Winter I+20%	51.450	49.225	-0.129	0.000	0.62	0.565	1.3	52.9	OK
ML5-15.003	ML5-44	15 minute 5 year Winter I+20%	51.585	49.114	-0.124	0.000	0.65	0.394	1.2	52.9	OK
ML5-14.002	ML5-45	15 minute 5 year Winter I+20%	50.010	48.538	-0.272	0.000	0.47	0.472	1.1	110.7	OK
ML5-19.000	ML5-46	15 minute 5 year Winter I+20%	52.019	51.900	-0.119	0.000	0.16	0.000	0.4	51.2	FLOOD RISK
ML5-19.001	ML5-47	15 minute 5 year Winter I+20%	49.981	49.080	-0.101	0.000	0.58	0.211	2.3	51.8	OK
ML5-1.006	ML5-48	15 minute 5 year Winter I+20%	50.332	48.465	-0.303	0.000	0.49	2.170	3.1	437.2	OK
ML5-20.000	ML5-49	15 minute 5 year Winter I+20%	49.981	49.857	-0.124	0.000	0.14	0.000	0.4	47.1	FLOOD RISK
ML5-20.001	ML5-50	15 minute 5 year Winter I+20%	48.133	46.814	-0.119	0.000	0.65	0.310	1.1	46.5	OK
ML5-1.007	ML5-51	15 minute 5 year Winter I+20%	48.480	46.577	-0.272	0.000	0.57	1.975	3.0	469.5	OK
ML5-21.000	ML5-52	15 minute 5 year Winter I+20%	50.010	49.878	-0.132	0.000	0.10	0.000	0.4	32.5	FLOOD RISK
ML5-21.001	ML5-53	15 minute 5 year Winter I+20%	48.133	48.023	-0.110	0.000	0.19	0.330	0.4	63.4	FLOOD RISK
ML5-21.002	ML5-54	15 minute 5 year Winter I+20%	46.331	45.234	-0.096	0.000	0.78	0.351	1.3	62.9	OK

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-22.000	ML5-55	15 minute 5 year Winter I+20%	48.133	48.008	-0.125	0.000	0.14	0.000	0.4	45.9	FLOOD RISK
ML5-22.001	ML5-56	15 minute 5 year Winter I+20%	46.305	45.339	0.009	0.000	1.04	0.405	1.2	45.0	SURCHARGED
ML5-1.008	ML5-57	15 minute 5 year Winter I+20%	46.625	44.969	-0.258	0.000	0.61	2.373	3.4	554.7	OK
ML5-23.000	ML5-58	15 minute 5 year Winter I+20%	46.331	46.207	-0.124	0.000	0.14	0.000	0.4	46.7	FLOOD RISK
ML5-24.000	ML5-59	15 minute 5 year Winter I+20%	52.150	52.054	-0.096	0.000	0.26	0.000	0.3	9.7	FLOOD RISK
ML5-24.001	ML5-60	15 minute 5 year Winter I+20%	50.911	50.738	-0.173	0.000	0.20	0.198	0.4	19.4	FLOOD RISK
ML5-24.002	ML5-61	15 minute 5 year Winter I+20%	49.049	47.752	-0.097	0.000	0.62	0.137	0.8	19.4	OK
ML5-24.003	ML5-62	15 minute 5 year Winter I+20%	49.386	47.707	-0.092	0.000	0.64	0.336	0.8	19.2	OK
ML5-25.000	ML5-63	15 minute 5 year Winter I+20%	52.431	52.177	-0.254	0.000	0.03	0.000	0.2	2.6	FLOOD RISK
ML5-25.001	ML5-64	15 minute 5 year Winter I+20%	50.892	50.649	-0.243	0.000	0.05	0.052	0.2	4.4	FLOOD RISK
ML5-24.004	ML5-65	15 minute 5 year Winter I+20%	49.411	47.530	-0.239	0.000	0.09	0.079	2.3	23.7	OK
ML5-23.001	ML5-66	15 minute 5 year Winter I+20%	44.506	42.969	-0.337	0.000	0.28	0.324	1.0	68.5	OK
ML5-26.000	ML5-67	15 minute 5 year Winter I+20%	46.305	46.182	-0.123	0.000	0.14	0.000	0.4	47.8	FLOOD RISK
ML5-26.001	ML5-68	15 minute 5 year Winter I+20%	44.479	43.418	-0.082	0.000	0.71	0.244	1.8	47.2	OK
ML5-1.009	ML5-69	15 minute 5 year Winter I+20%	44.773	42.849	-0.397	0.000	0.45	1.864	3.1	632.8	OK
ML5-27.000	ML5-70	15 minute 5 year Winter I+20%	44.479	44.318	-0.161	0.000	0.04	0.000	0.3	14.1	FLOOD RISK
ML5-27.001	ML5-71	15 minute 5 year Winter I+20%	43.864	43.801	-0.063	0.000	0.23	0.936	1.1	40.0	FLOOD RISK
ML5-27.002	ML5-72	15 minute 5 year Winter I+20%	42.498	41.458	-0.340	0.000	0.14	0.212	1.3	40.1	OK
ML5-28.000	ML5-73	15 minute 5 year Winter I+20%	44.706	44.548	-0.158	0.000	0.05	0.000	0.3	17.7	FLOOD RISK
ML5-28.001	ML5-74	15 minute 5 year Winter I+20%	43.996	43.939	-0.057	0.000	0.28	0.867	1.2	53.6	FLOOD RISK
ML5-28.002	ML5-75	15 minute 5 year Winter I+20%	42.283	41.149	-0.434	0.000	0.17	0.324	0.8	53.1	OK
ML5-1.010	ML5-76	15 minute 5 year Winter I+20%	42.720	41.117	-0.403	0.000	0.52	3.911	2.5	691.8	OK
ML5-29.000	ML5-77	15 minute 5 year Winter I+20%	42.498	42.351	-0.147	0.000	0.07	0.000	0.2	17.2	FLOOD RISK
ML5-29.001	ML5-78	15 minute 5 year Winter I+20%	42.092	41.238	-0.154	0.000	0.22	0.116	1.6	17.0	OK
ML5-1.011	ML5-79	15 minute 5 year Winter I+20%	42.220	40.789	-0.231	0.000	0.84	9.278	1.7	681.7	OK
ML5-30.000	ML5-80	15 minute 5 year Winter I+20%	42.220	42.159	-0.061	0.000	0.25	0.084	0.6	24.9	FLOOD RISK*
ML5-1.012	ML5-81	15 minute 5 year Winter I+20%	41.676	40.377	-0.418	0.000	0.56	19.226	2.0	685.5	OK
ML5-1.013	ML5-82	15 minute 5 year Winter I+20%	41.300	40.108	-0.392	0.000	0.61	8.586	1.9	686.1	OK
ML5-31.000	ML5-83	15 minute 5 year Winter I+20%	41.682	41.545	-0.137	0.000	0.09	0.000	0.3	22.1	FLOOD RISK
ML5-31.001	ML5-84	15 minute 5 year Winter I+20%	41.241	41.154	-0.087	0.000	0.29	1.002	0.2	41.0	FLOOD RISK
ML5-32.000	ML5-85	15 minute 5 year Winter I+20%	42.283	42.125	-0.158	0.000	0.05	0.000	0.3	13.7	FLOOD RISK
ML5-32.001	ML5-86	15 minute 5 year Winter I+20%	41.799	41.704	-0.095	0.000	0.25	0.520	0.3	52.9	FLOOD RISK
ML5-31.002	ML5-87	15 minute 5 year Winter I+20%	41.058	40.265	-0.213	0.000	0.38	0.542	0.9	93.4	OK
ML5-33.000	ML5-88	15 minute 5 year Summer I+20%	41.835	41.685	-0.150	0.000	0.00	0.000	0.0	0.0	OK
ML5-34.000	ML5-89	15 minute 5 year Winter I+20%	48.978	48.929	-0.049	0.000	0.35	0.000	0.4	20.6	FLOOD RISK
ML5-34.001	ML5-90	15 minute 5 year Winter I+20%	48.821	47.418	-0.203	0.000	0.21	0.103	1.0	19.3	OK
ML5-35.000	ML5-91	15 minute 5 year Winter I+20%	48.963	48.899	-0.064	0.000	0.23	0.000	0.7	27.0	FLOOD RISK
ML5-34.002	ML5-92	15 minute 5 year Winter I+20%	48.136	46.763	-0.173	0.000	0.36	0.375	1.6	43.5	OK
ML5-36.000	ML5-93	15 minute 5 year Winter I+20%	48.136	48.066	-0.070	0.000	0.19	0.000	0.9	26.9	FLOOD RISK
ML5-34.003	ML5-94	15 minute 5 year Winter I+20%	46.913	45.558	-0.155	0.000	0.46	0.342	2.0	65.5	OK
ML5-37.000	ML5-95	15 minute 5 year Winter I+20%	46.913	46.837	-0.076	0.000	0.16	0.000	1.0	26.8	FLOOD RISK
ML5-34.004	ML5-96	15 minute 5 year Winter I+20%	45.149	43.720	-0.229	0.000	0.31	0.320	2.2	86.1	OK
ML5-38.000	ML5-97	15 minute 5 year Winter I+20%	45.149	45.071	-0.078	0.000	0.15	0.000	1.0	27.1	FLOOD RISK
ML5-34.005	ML5-98	15 minute 5 year Winter I+20%	43.110	41.619	-0.291	0.000	0.27	0.356	2.2	107.6	OK
ML5-39.000	ML5-99	15 minute 5 year Winter I+20%	48.368	48.287	-0.081	0.000	0.26	0.000	0.2	36.5	FLOOD RISK
ML5-39.001	ML5-100	15 minute 5 year Winter I+20%	47.947	47.855	-0.092	0.000	0.24	2.393	0.3	57.8	FLOOD RISK
ML5-39.002	ML5-101	15 minute 5 year Winter I+20%	46.992	46.902	-0.090	0.000	0.26	1.054	0.4	77.4	FLOOD RISK
ML5-39.003	ML5-102	15 minute 5 year Winter I+20%	45.486	45.398	-0.088	0.000	0.27	0.635	0.5	93.2	FLOOD RISK
ML5-39.004	ML5-103	15 minute 5 year Winter I+20%	43.493	43.416	-0.077	0.000	0.34	0.647	0.5	111.2	FLOOD RISK
ML5-39.005	ML5-104	15 minute 5 year Winter I+20%	41.682	40.727	-0.255	0.000	0.52	0.469	1.0	111.3	OK
ML5-34.006	ML5-105	15 minute 5 year Winter I+20%	42.285	40.604	-0.328	0.000	0.42	1.317	1.6	200.6	OK
ML5-40.000	ML5-106	15 minute 5 year Winter I+20%	43.110	43.039	-0.071	0.000	0.18	0.000	0.9	26.4	FLOOD RISK
ML5-34.007	ML5-107	15 minute 5 year Winter I+20%	41.835	40.379	-0.256	0.000	0.62	4.624	1.3	213.0	OK
ML5-31.003	ML5-108	15 minute 5 year Winter I+20%	41.673	40.245	-0.367	0.000	0.52	9.603	1.3	300.1	OK
ML5-41.000	ML5-109	15 minute 5 year Winter I+20%	48.317	46.842	-0.147	0.000	0.24	0.063	1.1	12.2	OK
ML5-41.001	ML5-110	15 minute 5 year Winter I+20%	47.070	45.607	-0.133	0.000	0.34	0.149	1.4	20.5	OK
ML5-41.002	ML5-111	15 minute 5 year Winter I+20%	45.318	43.871	-0.120	0.000	0.42	0.154	1.6	27.5	OK
ML5-41.003	ML5-112	15 minute 5 year Winter I+20%	43.281	41.864	-0.087	0.000	0.66	0.232	1.4	34.2	OK
ML5-41.004	ML5-113	15 minute 5 year Winter I+20%	42.110	40.496	-0.175	0.000	0.36	0.327	1.4	38.4	OK
ML5-31.004	ML5-114	15 minute 5 year Winter I+20%	42.073	40.157	-0.459	0.000	0.41	4.188	1.5	337.5	OK
ML5-31.005	ML5-115	15 minute 5 year Winter I+20%	41.300	39.939	-0.486	0.000	0.35	3.332	1.6	335.6	OK
ML5-42.000	ML5-116	15 minute 5 year Winter I+20%	49.285	49.114	-0.171	0.000	0.17	0.000	0.3	13.9	FLOOD RISK
ML5-42.001	ML5-117	15 minute 5 year Winter I+20%	47.816	47.663	-0.153	0.000	0.22	0.304	0.5	25.6	FLOOD RISK
ML5-43.000	ML5-118	15 minute 5 year Winter I+20%	45.807	45.537	-0.270	0.000	0.02	0.000	0.2	2.0	FLOOD RISK
ML5-43.001	ML5-119	15 minute 5 year Winter I+20%	44.647	44.392	-0.255	0.000	0.03	0.050	0.2	2.8	FLOOD RISK*
ML5-42.002	ML5-120	15 minute 5 year Winter I+20%	44.237	44.091	-0.146	0.000	0.28	0.450	0.4	28.1	FLOOD RISK
ML5-42.003	ML5-121	15 minute 5 year Winter I+20%	43.946	42.505	-0.241	0.000	0.09	0.061	2.9	28.2	OK
ML5-42.004	ML5-122	960 minute 5 year Winter I+20%	41.300	39.803	-0.097	0.000	0.04	0.238	0.4	2.6	OK*
ML5-1.014	ML5-AB	960 minute 5 year Winter I+20%	41.300	39.803	0.053	0.000	0.06	2359.943	1.0	11.8	SURCHARGED
ML5-1.015	ML5-123	960 minute 5 year Winter I+20%	41.300	39.194	-0.419	0.000	0.01	0.070	2.6	11.8	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 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	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-1.000	ML5-01	15 minute 30 year Winter I+40%	54.949	54.911	-0.038	0.000	0.60	0.000	0.2	73.3	FLOOD RISK
ML5-1.001	ML5-02	15 minute 30 year Winter I+40%	54.715	53.752	0.237	0.000	1.72	0.808	1.8	72.4	SURCHARGED
ML5-2.000	ML5-03	15 minute 30 year Winter I+40%	54.949	54.910	-0.039	0.000	0.60	0.000	0.2	73.2	FLOOD RISK
ML5-2.001	ML5-04	15 minute 30 year Winter I+40%	54.710	53.739	0.229	0.000	1.72	0.793	1.8	72.2	SURCHARGED
ML5-1.002	ML5-05	15 minute 30 year Winter I+40%	55.125	53.188	-0.207	0.000	0.55	0.460	1.7	142.1	OK
ML5-3.000	ML5-06	15 minute 30 year Winter I+40%	54.715	54.629	-0.086	0.000	0.29	0.000	0.3	60.4	FLOOD RISK
ML5-3.001	ML5-07	15 minute 30 year Winter I+40%	54.178	53.131	0.153	0.000	1.74	0.660	1.5	61.1	SURCHARGED
ML5-4.000	ML5-09	15 minute 30 year Winter I+40%	54.710	54.625	-0.085	0.000	0.30	0.000	0.3	57.1	FLOOD RISK
ML5-4.001	ML5-09A	15 minute 30 year Winter I+40%	54.252	53.101	0.049	0.000	1.17	0.475	1.5	57.8	SURCHARGED
ML5-1.003	ML5-08	15 minute 30 year Winter I+40%	54.609	52.737	-0.161	0.000	0.72	2.342	2.4	247.1	OK
ML5-5.000	ML5-Dummy 09	15 minute 30 year Summer I+40%	54.710	54.510	-0.100	0.000	0.00	0.000	0.0	0.0	OK
ML5-5.001	ML5-10	15 minute 30 year Winter I+40%	54.121	54.080	-0.041	0.000	0.40	0.003	0.9	52.2	FLOOD RISK
ML5-5.002	ML5-11	15 minute 30 year Winter I+40%	53.411	53.319	-0.092	0.000	0.26	0.042	0.4	66.0	FLOOD RISK
ML5-6.000	ML5-12	15 minute 30 year Winter I+40%	53.321	53.125	-0.196	0.000	0.14	0.000	0.3	13.5	FLOOD RISK
ML5-6.001	ML5-13	15 minute 30 year Winter I+40%	52.490	51.876	0.086	0.000	0.13	0.509	0.4	13.6	SURCHARGED
ML5-5.003	ML5-14	15 minute 30 year Winter I+40%	53.221	51.875	0.132	0.000	0.65	1.521	1.2	79.7	SURCHARGED
ML5-7.000	ML5-15	15 minute 30 year Winter I+40%	54.378	54.344	-0.034	0.000	0.48	0.000	1.1	72.4	FLOOD RISK
ML5-7.001	ML5-16	15 minute 30 year Winter I+40%	53.415	53.339	-0.076	0.000	0.34	0.100	0.4	85.0	FLOOD RISK
ML5-8.000	ML5-17	15 minute 30 year Summer I+40%	58.698	57.284	-1.414	0.000	0.00	0.000	0.0	0.0	OK
ML5-9.000	ML5-18	15 minute 30 year Winter I+40%	57.780	57.546	-0.234	0.000	0.13	0.000	0.2	8.4	FLOOD RISK
ML5-10.000	ML5-19	15 minute 30 year Winter I+40%	58.397	58.311	-0.086	0.000	0.51	0.000	0.4	38.5	FLOOD RISK
ML5-11.000	ML5-20	15 minute 30 year Winter I+40%	58.032	57.837	-0.195	0.000	0.33	0.000	0.3	50.8	FLOOD RISK
ML5-9.001	ML5-21	15 minute 30 year Winter I+40%	57.226	56.223	0.530	0.000	2.72	1.213	2.4	97.7	SURCHARGED
ML5-8.001	ML5-22	15 minute 30 year Winter I+40%	56.590	55.673	-0.917	0.000	0.06	0.761	0.6	132.7	OK
ML5-8.002	ML5-23	15 minute 30 year Winter I+40%	54.477	53.136	-0.141	0.000	0.71	0.255	1.8	129.2	OK
ML5-8.003	ML5-24	15 minute 30 year Winter I+40%	53.469	52.295	0.026	0.000	1.21	2.601	1.2	129.8	SURCHARGED
ML5-7.002	ML5-25	15 minute 30 year Winter I+40%	53.224	52.047	-0.152	0.000	0.67	0.921	2.8	193.8	OK
ML5-1.004	ML5-26	15 minute 30 year Winter I+40%	53.612	51.773	0.127	0.000	1.07	8.762	2.3	464.1	SURCHARGED
ML5-12.000	ML5-27	15 minute 30 year Winter I+40%	53.421	53.313	-0.108	0.000	0.20	0.000	0.4	62.8	FLOOD RISK
ML5-13.000	ML5-28	15 minute 30 year Winter I+40%	52.525	52.399	-0.126	0.000	0.35	0.000	0.2	16.2	FLOOD RISK
ML5-13.001	ML5-29	15 minute 30 year Winter I+40%	52.100	51.256	0.331	0.000	0.53	0.138	0.4	15.9	SURCHARGED
ML5-12.001	ML5-30	15 minute 30 year Winter I+40%	52.019	51.241	0.361	0.000	1.83	1.269	1.9	77.4	SURCHARGED
ML5-1.005	ML5-31	15 minute 30 year Winter I+40%	52.180	50.459	-0.268	0.000	0.59	1.813	3.3	525.0	OK
ML5-14.000	ML5-32	15 minute 30 year Winter I+40%	53.224	53.128	-0.096	0.000	0.21	0.000	0.4	60.2	FLOOD RISK
ML5-14.001	ML5-33	15 minute 30 year Winter I+40%	51.791	51.726	-0.065	0.000	0.39	1.213	0.5	128.4	FLOOD RISK
ML5-15.000	ML5-34	15 minute 30 year Winter I+40%	52.351	52.123	-0.228	0.000	0.07	0.000	0.2	4.7	FLOOD RISK
ML5-15.001	ML5-35	15 minute 30 year Winter I+40%	51.737	51.561	-0.176	0.000	0.19	0.279	0.2	8.7	FLOOD RISK
ML5-16.000	ML5-36	15 minute 30 year Winter I+40%	55.327	55.180	-0.147	0.000	0.24	0.000	0.5	32.8	FLOOD RISK
ML5-16.001	ML5-37	15 minute 30 year Winter I+40%	52.064	51.840	-0.224	0.000	0.26	0.062	0.4	60.8	FLOOD RISK
ML5-17.000	ML5-38	15 minute 30 year Winter I+40%	52.247	52.165	-0.082	0.000	0.48	0.000	0.1	13.0	FLOOD RISK
ML5-17.001	ML5-39	15 minute 30 year Winter I+40%	52.124	51.988	-0.136	0.000	0.31	3.011	0.4	29.8	FLOOD RISK
ML5-16.002	ML5-40	15 minute 30 year Winter I+40%	50.602	49.774	0.372	0.000	1.54	0.911	1.2	88.0	SURCHARGED
ML5-18.000	ML5-41	15 minute 30 year Winter I+40%	52.328	52.105	-0.223	0.000	0.07	0.000	0.1	3.8	FLOOD RISK
ML5-18.001	ML5-42	15 minute 30 year Winter I+40%	51.889	51.701	-0.188	0.000	0.16	0.372	0.2	8.1	FLOOD RISK
ML5-15.002	ML5-43	15 minute 30 year Winter I+40%	51.450	49.646	0.292	0.000	1.20	1.557	1.5	102.1	SURCHARGED
ML5-15.003	ML5-44	15 minute 30 year Winter I+40%	51.585	49.474	0.236	0.000	1.21	1.157	1.5	99.0	SURCHARGED
ML5-14.002	ML5-45	15 minute 30 year Winter I+40%	50.010	48.724	-0.086	0.000	0.91	1.628	1.3	215.8	OK
ML5-19.000	ML5-46	15 minute 30 year Winter I+40%	52.019	51.935	-0.084	0.000	0.30	0.000	0.5	99.6	FLOOD RISK
ML5-19.001	ML5-47	15 minute 30 year Winter I+40%	49.981	49.301	0.120	0.000	1.13	0.601	2.6	101.8	SURCHARGED
ML5-1.006	ML5-48	15 minute 30 year Winter I+40%	50.332	48.681	-0.087	0.000	0.91	6.201	3.6	811.8	OK
ML5-20.000	ML5-49	15 minute 30 year Winter I+40%	49.981	49.891	-0.090	0.000	0.28	0.000	0.5	91.8	FLOOD RISK
ML5-20.001	ML5-50	15 minute 30 year Winter I+40%	48.133	47.297	0.364	0.000	1.28	1.165	1.3	90.8	SURCHARGED
ML5-1.007	ML5-51	15 minute 30 year Winter I+40%	48.480	47.213	0.364	0.000	1.02	12.850	3.3	834.2	SURCHARGED
ML5-21.000	ML5-52	15 minute 30 year Winter I+40%	50.010	49.908	-0.102	0.000	0.19	0.000	0.5	63.4	FLOOD RISK
ML5-21.001	ML5-53	15 minute 30 year Winter I+40%	48.133	48.070	-0.063	0.000	0.40	0.926	0.5	132.7	FLOOD RISK
ML5-21.002	ML5-54	15 minute 30 year Winter I+40%	46.331	45.648	0.318	0.000	1.65	1.084	1.9	132.9	SURCHARGED

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-22.000	ML5-55	15 minute 30 year Winter I+40%	48.133	48.040	-0.093	0.000	0.27	0.000	0.5	89.5	FLOOD RISK
ML5-22.001	ML5-56	15 minute 30 year Winter I+40%	46.305	45.700	0.370	0.000	2.03	1.042	2.2	87.7	SURCHARGED
ML5-1.008	ML5-57	15 minute 30 year Winter I+40%	46.625	45.519	0.292	0.000	1.08	13.806	3.7	972.5	SURCHARGED
ML5-23.000	ML5-58	15 minute 30 year Winter I+40%	46.331	46.240	-0.091	0.000	0.27	0.000	0.5	91.0	FLOOD RISK
ML5-24.000	ML5-59	15 minute 30 year Winter I+40%	52.150	52.100	-0.050	0.000	0.51	0.000	0.3	18.9	FLOOD RISK
ML5-24.001	ML5-60	15 minute 30 year Winter I+40%	50.911	50.805	-0.106	0.000	0.42	0.469	0.4	41.6	FLOOD RISK
ML5-24.002	ML5-61	15 minute 30 year Winter I+40%	49.049	47.931	0.082	0.000	1.31	0.337	1.1	41.2	SURCHARGED
ML5-24.003	ML5-62	15 minute 30 year Winter I+40%	49.386	47.848	0.049	0.000	1.38	0.712	1.0	41.2	SURCHARGED
ML5-25.000	ML5-63	15 minute 30 year Winter I+40%	52.431	52.199	-0.232	0.000	0.06	0.000	0.2	5.1	FLOOD RISK
ML5-25.001	ML5-64	15 minute 30 year Winter I+40%	50.892	50.680	-0.212	0.000	0.10	0.084	0.3	9.2	FLOOD RISK
ML5-24.004	ML5-65	15 minute 30 year Winter I+40%	49.411	47.559	-0.210	0.000	0.20	0.119	2.8	50.4	OK
ML5-23.001	ML5-66	15 minute 30 year Winter I+40%	44.506	43.066	-0.240	0.000	0.56	0.501	1.2	139.2	OK
ML5-26.000	ML5-67	15 minute 30 year Winter I+40%	46.305	46.215	-0.090	0.000	0.28	0.000	0.5	93.3	FLOOD RISK
ML5-26.001	ML5-68	15 minute 30 year Winter I+40%	44.479	43.757	0.257	0.000	1.40	0.843	2.3	92.8	SURCHARGED
ML5-1.009	ML5-69	15 minute 30 year Winter I+40%	44.773	43.006	-0.240	0.000	0.80	4.324	3.6	1132.4	OK
ML5-27.000	ML5-70	15 minute 30 year Winter I+40%	44.479	44.338	-0.141	0.000	0.08	0.000	0.3	27.4	FLOOD RISK
ML5-27.001	ML5-71	15 minute 30 year Winter I+40%	43.864	43.832	-0.032	0.000	0.52	1.472	1.3	91.0	FLOOD RISK
ML5-27.002	ML5-72	15 minute 30 year Winter I+40%	42.498	41.822	0.024	0.000	0.31	0.946	1.7	91.1	SURCHARGED
ML5-28.000	ML5-73	15 minute 30 year Winter I+40%	44.706	44.569	-0.137	0.000	0.10	0.000	0.4	34.5	FLOOD RISK
ML5-28.001	ML5-74	15 minute 30 year Winter I+40%	43.996	43.973	-0.023	0.000	0.63	1.341	1.5	121.0	FLOOD RISK
ML5-28.002	ML5-75	15 minute 30 year Winter I+40%	42.283	41.760	0.177	0.000	0.39	1.557	1.0	121.6	SURCHARGED
ML5-1.010	ML5-76	15 minute 30 year Winter I+40%	42.720	41.755	0.235	0.000	0.89	26.263	2.6	1197.6	SURCHARGED
ML5-29.000	ML5-77	15 minute 30 year Winter I+40%	42.498	42.374	-0.124	0.000	0.14	0.000	0.3	33.5	FLOOD RISK
ML5-29.001	ML5-78	15 minute 30 year Winter I+40%	42.092	41.371	-0.021	0.000	0.42	0.352	1.9	33.2	OK
ML5-1.011	ML5-79	15 minute 30 year Winter I+40%	42.220	41.351	0.331	0.000	1.47	22.121	2.3	1191.9	SURCHARGED
ML5-30.000	ML5-80	15 minute 30 year Winter I+40%	42.220	42.184	-0.036	0.000	0.48	0.109	0.8	48.5	FLOOD RISK*
ML5-1.012	ML5-81	15 minute 30 year Winter I+40%	41.676	40.704	-0.091	0.000	0.94	42.537	2.2	1149.5	OK
ML5-1.013	ML5-82	15 minute 30 year Winter I+40%	41.300	40.458	-0.042	0.000	1.00	18.549	2.0	1127.3	OK
ML5-31.000	ML5-83	15 minute 30 year Winter I+40%	41.682	41.571	-0.111	0.000	0.18	0.000	0.3	43.1	FLOOD RISK
ML5-31.001	ML5-84	15 minute 30 year Winter I+40%	41.241	41.207	-0.034	0.000	0.63	2.701	0.2	88.6	FLOOD RISK
ML5-32.000	ML5-85	15 minute 30 year Winter I+40%	42.283	42.145	-0.138	0.000	0.09	0.000	0.3	26.7	FLOOD RISK
ML5-32.001	ML5-86	15 minute 30 year Winter I+40%	41.799	41.759	-0.040	0.000	0.58	1.744	0.4	121.4	FLOOD RISK
ML5-31.002	ML5-87	15 minute 30 year Winter I+40%	41.058	40.544	0.066	0.000	0.83	1.036	1.1	206.3	SURCHARGED
ML5-33.000	ML5-88	15 minute 30 year Summer I+40%	41.835	41.685	-0.150	0.000	0.00	0.000	0.0	0.0	OK
ML5-34.000	ML5-89	15 minute 30 year Winter I+40%	48.978	48.959	-0.019	0.000	0.69	0.000	0.5	40.1	FLOOD RISK
ML5-34.001	ML5-90	15 minute 30 year Winter I+40%	48.821	47.462	-0.159	0.000	0.42	0.152	1.2	37.6	OK
ML5-35.000	ML5-91	15 minute 30 year Winter I+40%	48.963	48.924	-0.039	0.000	0.44	0.000	0.9	52.4	FLOOD RISK
ML5-34.002	ML5-92	15 minute 30 year Winter I+40%	48.136	46.828	-0.108	0.000	0.71	0.779	1.8	84.9	OK
ML5-36.000	ML5-93	15 minute 30 year Winter I+40%	48.136	48.089	-0.047	0.000	0.37	0.000	1.0	52.5	FLOOD RISK
ML5-34.003	ML5-94	15 minute 30 year Winter I+40%	46.913	45.640	-0.073	0.000	0.89	0.712	2.3	127.7	OK
ML5-37.000	ML5-95	15 minute 30 year Winter I+40%	46.913	46.858	-0.055	0.000	0.30	0.000	1.2	52.2	FLOOD RISK
ML5-34.004	ML5-96	15 minute 30 year Winter I+40%	45.149	43.790	-0.159	0.000	0.61	0.535	2.6	167.6	OK
ML5-38.000	ML5-97	15 minute 30 year Winter I+40%	45.149	45.092	-0.057	0.000	0.29	0.000	1.2	52.8	FLOOD RISK
ML5-34.005	ML5-98	15 minute 30 year Winter I+40%	43.110	41.693	-0.217	0.000	0.52	0.609	2.6	209.2	OK
ML5-39.000	ML5-99	15 minute 30 year Winter I+40%	48.368	48.332	-0.036	0.000	0.50	0.000	0.2	71.1	FLOOD RISK
ML5-39.001	ML5-100	15 minute 30 year Winter I+40%	47.947	47.903	-0.044	0.000	0.48	6.824	0.4	113.0	FLOOD RISK
ML5-39.002	ML5-101	15 minute 30 year Winter I+40%	46.992	46.951	-0.041	0.000	0.50	2.685	0.5	148.5	FLOOD RISK
ML5-39.003	ML5-102	15 minute 30 year Winter I+40%	45.486	45.448	-0.038	0.000	0.52	1.655	0.6	179.8	FLOOD RISK
ML5-39.004	ML5-103	15 minute 30 year Winter I+40%	43.493	43.467	-0.026	0.000	0.68	1.446	0.6	223.6	FLOOD RISK
ML5-39.005	ML5-104	15 minute 30 year Winter I+40%	41.682	41.055	0.073	0.000	1.04	1.048	1.1	222.5	SURCHARGED
ML5-34.006	ML5-105	15 minute 30 year Winter I+40%	42.285	40.997	0.065	0.000	0.87	6.401	1.8	411.9	SURCHARGED
ML5-40.000	ML5-106	15 minute 30 year Winter I+40%	43.110	43.061	-0.049	0.000	0.35	0.000	1.0	51.6	FLOOD RISK
ML5-34.007	ML5-107	15 minute 30 year Winter I+40%	41.835	40.776	0.141	0.000	1.26	14.145	1.6	435.9	SURCHARGED
ML5-31.003	ML5-108	15 minute 30 year Winter I+40%	41.673	40.493	-0.119	0.000	1.00	17.501	1.5	581.2	OK
ML5-41.000	ML5-109	15 minute 30 year Winter I+40%	48.317	46.878	-0.111	0.000	0.47	0.095	1.3	23.8	OK
ML5-41.001	ML5-110	15 minute 30 year Winter I+40%	47.070	45.663	-0.077	0.000	0.70	0.315	1.7	42.5	OK
ML5-41.002	ML5-111	15 minute 30 year Winter I+40%	45.318	44.096	0.105	0.000	0.84	0.841	1.8	54.7	SURCHARGED
ML5-41.003	ML5-112	15 minute 30 year Winter I+40%	43.281	42.712	0.761	0.000	1.24	2.796	1.6	64.1	SURCHARGED
ML5-41.004	ML5-113	15 minute 30 year Winter I+40%	42.110	40.612	-0.059	0.000	0.64	0.786	1.6	67.9	OK
ML5-31.004	ML5-114	15 minute 30 year Winter I+40%	42.073	40.343	-0.273	0.000	0.78	7.021	1.7	648.7	OK
ML5-31.005	ML5-115	1440 minute 30 year Winter I+40%	41.300	40.217	-0.208	0.000	0.05	8.216	0.9	47.0	OK
ML5-42.000	ML5-116	15 minute 30 year Winter I+40%	49.285	49.171	-0.114	0.000	0.34	0.000	0.4	27.1	FLOOD RISK
ML5-42.001	ML5-117	15 minute 30 year Winter I+40%	47.816	47.738	-0.078	0.000	0.45	0.714	0.6	52.8	FLOOD RISK
ML5-43.000	ML5-118	15 minute 30 year Winter I+40%	45.807	45.552	-0.255	0.000	0.03	0.000	0.3	3.9	FLOOD RISK
ML5-43.001	ML5-119	15 minute 30 year Winter I+40%	44.647	44.417	-0.230	0.000	0.07	0.081	0.2	5.7	FLOOD RISK*
ML5-42.002	ML5-120	15 minute 30 year Winter I+40%	44.237	44.164	-0.073	0.000	0.58	1.055	0.5	58.2	FLOOD RISK
ML5-42.003	ML5-121	15 minute 30 year Winter I+40%	43.946	42.531	-0.215	0.000	0.18	0.090	3.5	58.4	OK
ML5-42.004	ML5-122	10080 minute 30 year Summer I+40%	41.300	39.900	0.000	0.000	0.02	0.560	0.3	1.0	SURCHARGED*
ML5-1.014	ML5-AB	1440 minute 30 year Winter I+40%	41.300	40.215	0.465	0.000	0.08	4598.559	1.1	15.7	SURCHARGED
ML5-1.015	ML5-123	1440 minute 30 year Winter I+40%	41.300	39.204	-0.409	0.000	0.02	0.097	2.6	15.7	OK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 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	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-1.000	ML5-01	15 minute 100 year Winter I+45%	54.949	54.934	-0.015	0.000	0.81	0.000	0.2	99.0	FLOOD RISK
ML5-1.001	ML5-02	15 minute 100 year Winter I+45%	54.715	54.050	0.535	0.000	2.31	1.334	2.4	97.4	SURCHARGED
ML5-2.000	ML5-03	15 minute 100 year Winter I+45%	54.949	54.933	-0.016	0.000	0.81	0.000	0.2	98.9	FLOOD RISK
ML5-2.001	ML5-04	15 minute 100 year Winter I+45%	54.710	54.026	0.516	0.000	2.32	1.300	2.4	97.2	SURCHARGED
ML5-1.002	ML5-05	15 minute 100 year Winter I+45%	55.125	53.326	-0.069	0.000	0.73	1.201	1.8	188.3	OK
ML5-3.000	ML5-06	15 minute 100 year Winter I+45%	54.715	54.650	-0.065	0.000	0.40	0.000	0.3	81.6	FLOOD RISK
ML5-3.001	ML5-07	15 minute 100 year Winter I+45%	54.178	53.327	0.349	0.000	2.34	1.005	2.1	82.2	SURCHARGED
ML5-4.000	ML5-09	15 minute 100 year Winter I+45%	54.710	54.647	-0.063	0.000	0.41	0.000	0.3	77.0	FLOOD RISK
ML5-4.001	ML5-09A	15 minute 100 year Winter I+45%	54.252	53.270	0.218	0.000	1.57	0.775	2.0	77.7	SURCHARGED
ML5-1.003	ML5-08	15 minute 100 year Winter I+45%	54.609	53.120	0.222	0.000	0.83	10.852	2.4	285.5	SURCHARGED
ML5-5.000	ML5-Dummy 09	15 minute 100 year Summer I+45%	54.710	54.510	-0.100	0.000	0.00	0.000	0.0	0.0	OK
ML5-5.001	ML5-10	15 minute 100 year Winter I+45%	54.121	54.093	-0.028	0.000	0.54	0.003	1.0	70.3	FLOOD RISK
ML5-5.002	ML5-11	15 minute 100 year Winter I+45%	53.411	53.338	-0.073	0.000	0.36	0.148	0.4	89.1	FLOOD RISK
ML5-6.000	ML5-12	15 minute 100 year Winter I+45%	53.321	53.145	-0.176	0.000	0.19	0.000	0.4	18.2	FLOOD RISK
ML5-6.001	ML5-13	15 minute 100 year Winter I+45%	52.490	52.328	0.538	0.000	0.15	0.947	0.4	16.6	FLOOD RISK
ML5-5.003	ML5-14	15 minute 100 year Winter I+45%	53.221	52.326	0.583	0.000	0.82	2.318	1.2	99.7	SURCHARGED
ML5-7.000	ML5-15	15 minute 100 year Winter I+45%	54.378	54.358	-0.020	0.000	0.65	0.000	1.2	97.7	FLOOD RISK
ML5-7.001	ML5-16	15 minute 100 year Winter I+45%	53.415	53.360	-0.055	0.000	0.46	0.186	0.4	114.8	FLOOD RISK
ML5-8.000	ML5-17	15 minute 100 year Summer I+45%	58.698	57.284	-1.414	0.000	0.00	0.000	0.0	0.0	OK
ML5-9.000	ML5-18	15 minute 100 year Winter I+45%	57.780	57.570	-0.210	0.000	0.18	0.000	0.2	11.3	FLOOD RISK
ML5-10.000	ML5-19	15 minute 100 year Winter I+45%	58.397	58.346	-0.051	0.000	0.69	0.000	0.4	51.9	FLOOD RISK
ML5-11.000	ML5-20	15 minute 100 year Winter I+45%	58.032	57.881	-0.151	0.000	0.44	0.000	0.3	68.5	FLOOD RISK
ML5-9.001	ML5-21	15 minute 100 year Winter I+45%	57.226	56.729	1.036	0.000	3.66	2.030	3.3	131.6	SURCHARGED
ML5-8.001	ML5-22	15 minute 100 year Winter I+45%	56.590	55.728	-0.862	0.000	0.08	0.846	0.6	177.5	OK
ML5-8.002	ML5-23	15 minute 100 year Winter I+45%	54.477	53.580	0.303	0.000	0.94	0.751	1.8	169.9	SURCHARGED
ML5-8.003	ML5-24	15 minute 100 year Winter I+45%	53.469	52.767	0.498	0.000	1.58	7.889	1.5	169.7	SURCHARGED
ML5-7.002	ML5-25	15 minute 100 year Winter I+45%	53.224	52.575	0.376	0.000	0.79	2.448	2.9	230.6	SURCHARGED
ML5-1.004	ML5-26	15 minute 100 year Winter I+45%	53.612	52.238	0.592	0.000	1.28	16.791	2.6	557.9	SURCHARGED
ML5-12.000	ML5-27	15 minute 100 year Winter I+45%	53.421	53.330	-0.091	0.000	0.27	0.000	0.5	84.8	FLOOD RISK
ML5-13.000	ML5-28	15 minute 100 year Winter I+45%	52.525	52.430	-0.095	0.000	0.47	0.000	0.2	21.8	FLOOD RISK
ML5-13.001	ML5-29	15 minute 100 year Winter I+45%	52.100	51.710	0.785	0.000	0.71	0.253	0.5	21.3	SURCHARGED
ML5-12.001	ML5-30	15 minute 100 year Winter I+45%	52.019	51.658	0.778	0.000	2.45	2.005	2.6	104.0	SURCHARGED
ML5-1.005	ML5-31	15 minute 100 year Winter I+45%	52.180	50.680	-0.047	0.000	0.70	6.343	3.4	630.2	OK
ML5-14.000	ML5-32	15 minute 100 year Winter I+45%	53.224	53.146	-0.078	0.000	0.29	0.000	0.4	81.2	FLOOD RISK
ML5-14.001	ML5-33	15 minute 100 year Winter I+45%	51.791	51.746	-0.045	0.000	0.53	1.665	0.6	172.9	FLOOD RISK
ML5-15.000	ML5-34	15 minute 100 year Winter I+45%	52.351	52.136	-0.215	0.000	0.09	0.000	0.2	6.3	FLOOD RISK
ML5-15.001	ML5-35	15 minute 100 year Winter I+45%	51.737	51.583	-0.154	0.000	0.25	0.418	0.2	11.8	FLOOD RISK
ML5-16.000	ML5-36	15 minute 100 year Winter I+45%	55.327	55.207	-0.120	0.000	0.33	0.000	0.6	44.1	FLOOD RISK
ML5-16.001	ML5-37	15 minute 100 year Winter I+45%	52.064	51.879	-0.185	0.000	0.34	0.084	0.4	79.6	FLOOD RISK
ML5-17.000	ML5-38	15 minute 100 year Winter I+45%	52.247	52.201	-0.046	0.000	0.64	0.000	0.1	17.5	FLOOD RISK
ML5-17.001	ML5-39	15 minute 100 year Winter I+45%	52.124	52.019	-0.105	0.000	0.42	4.030	0.4	39.9	FLOOD RISK
ML5-16.002	ML5-40	15 minute 100 year Winter I+45%	50.602	50.522	1.120	0.000	1.92	4.835	1.6	109.3	FLOOD RISK
ML5-18.000	ML5-41	15 minute 100 year Winter I+45%	52.328	52.120	-0.208	0.000	0.10	0.000	0.2	5.1	FLOOD RISK
ML5-18.001	ML5-42	15 minute 100 year Winter I+45%	51.889	51.721	-0.168	0.000	0.21	0.585	0.2	10.8	FLOOD RISK
ML5-15.002	ML5-43	15 minute 100 year Winter I+45%	51.450	50.432	1.078	0.000	1.45	2.631	1.8	123.5	SURCHARGED
ML5-15.003	ML5-44	15 minute 100 year Winter I+45%	51.585	50.311	1.073	0.000	1.38	2.103	1.7	112.6	SURCHARGED
ML5-14.002	ML5-45	15 minute 100 year Winter I+45%	50.010	49.818	1.008	0.000	1.09	7.865	1.3	258.7	FLOOD RISK
ML5-19.000	ML5-46	15 minute 100 year Winter I+45%	52.019	51.957	-0.062	0.000	0.41	0.000	0.5	134.5	FLOOD RISK
ML5-19.001	ML5-47	15 minute 100 year Winter I+45%	49.981	49.969	0.788	0.000	1.44	3.503	3.3	128.9	FLOOD RISK
ML5-1.006	ML5-48	15 minute 100 year Winter I+45%	50.332	49.782	1.014	0.000	0.98	25.017	3.5	869.8	SURCHARGED
ML5-20.000	ML5-49	15 minute 100 year Winter I+45%	49.981	49.911	-0.070	0.000	0.37	0.000	0.5	123.9	FLOOD RISK
ML5-20.001	ML5-50	15 minute 100 year Winter I+45%	48.133	48.071	1.138	0.000	1.64	3.619	1.6	116.8	FLOOD RISK
ML5-1.007	ML5-51	15 minute 100 year Winter I+45%	48.480	48.007	1.158	0.000	1.10	26.380	3.3	903.6	SURCHARGED
ML5-21.000	ML5-52	15 minute 100 year Winter I+45%	50.010	49.925	-0.085	0.000	0.26	0.000	0.5	85.5	FLOOD RISK
ML5-21.001	ML5-53	15 minute 100 year Winter I+45%	48.133	48.090	-0.043	0.000	0.54	1.247	0.6	179.3	FLOOD RISK
ML5-21.002	ML5-54	15 minute 100 year Winter I+45%	46.331	46.222	0.892	0.000	2.11	2.457	2.4	169.5	FLOOD RISK

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML05 New

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-22.000	ML5-55	15 minute 100 year Winter I+45%	48.133	48.060	-0.073	0.000	0.36	0.000	0.5	120.2	FLOOD RISK
ML5-22.001	ML5-56	15 minute 100 year Winter I+45%	46.305	46.208	0.878	0.000	2.61	2.923	2.8	112.9	FLOOD RISK
ML5-1.008	ML5-57	15 minute 100 year Winter I+45%	46.625	46.057	0.830	0.000	1.17	24.371	3.7	1055.0	SURCHARGED
ML5-23.000	ML5-58	15 minute 100 year Winter I+45%	46.331	46.260	-0.071	0.000	0.37	0.000	0.5	122.9	FLOOD RISK
ML5-24.000	ML5-59	15 minute 100 year Winter I+45%	52.150	52.126	-0.024	0.000	0.68	0.000	0.4	25.4	FLOOD RISK
ML5-24.001	ML5-60	15 minute 100 year Winter I+45%	50.911	50.837	-0.074	0.000	0.56	0.640	0.5	56.0	FLOOD RISK
ML5-24.002	ML5-61	15 minute 100 year Winter I+45%	49.049	48.076	0.227	0.000	1.75	0.499	1.4	55.2	SURCHARGED
ML5-24.003	ML5-62	15 minute 100 year Winter I+45%	49.386	47.921	0.122	0.000	1.86	0.853	1.4	55.7	SURCHARGED
ML5-25.000	ML5-63	15 minute 100 year Winter I+45%	52.431	52.212	-0.219	0.000	0.08	0.000	0.3	6.8	FLOOD RISK
ML5-25.001	ML5-64	15 minute 100 year Winter I+45%	50.892	50.696	-0.196	0.000	0.14	0.100	0.3	12.4	FLOOD RISK
ML5-24.004	ML5-65	15 minute 100 year Winter I+45%	49.411	47.573	-0.196	0.000	0.26	0.139	3.1	67.8	OK
ML5-23.001	ML5-66	15 minute 100 year Winter I+45%	44.506	43.432	0.126	0.000	0.74	1.470	1.3	184.2	SURCHARGED
ML5-26.000	ML5-67	15 minute 100 year Winter I+45%	46.305	46.235	-0.070	0.000	0.38	0.000	0.5	125.9	FLOOD RISK
ML5-26.001	ML5-68	15 minute 100 year Winter I+45%	44.479	44.176	0.676	0.000	1.89	1.583	3.1	125.3	SURCHARGED
ML5-1.009	ML5-69	15 minute 100 year Winter I+45%	44.773	43.403	0.157	0.000	0.88	12.924	3.6	1245.0	SURCHARGED
ML5-27.000	ML5-70	15 minute 100 year Winter I+45%	44.479	44.347	-0.132	0.000	0.11	0.000	0.4	37.0	FLOOD RISK
ML5-27.001	ML5-71	15 minute 100 year Winter I+45%	43.864	43.846	-0.018	0.000	0.71	1.711	1.4	122.8	FLOOD RISK
ML5-27.002	ML5-72	30 minute 100 year Winter I+45%	42.498	42.300	0.502	0.000	0.31	1.911	1.7	93.1	FLOOD RISK
ML5-28.000	ML5-73	15 minute 100 year Winter I+45%	44.706	44.579	-0.127	0.000	0.13	0.000	0.4	46.6	FLOOD RISK
ML5-28.001	ML5-74	15 minute 100 year Winter I+45%	43.996	43.988	-0.008	0.000	0.85	1.555	1.6	163.2	FLOOD RISK
ML5-28.002	ML5-75	30 minute 100 year Winter I+45%	42.283	42.159	0.576	0.000	0.38	2.362	1.0	118.0	FLOOD RISK
ML5-1.010	ML5-76	30 minute 100 year Winter I+45%	42.720	42.151	0.631	0.000	0.98	38.742	2.6	1307.6	SURCHARGED
ML5-29.000	ML5-77	15 minute 100 year Winter I+45%	42.498	42.387	-0.111	0.000	0.19	0.000	0.3	45.2	FLOOD RISK
ML5-29.001	ML5-78	30 minute 100 year Winter I+45%	42.092	41.712	0.320	0.000	0.44	0.955	1.9	34.6	SURCHARGED
ML5-1.011	ML5-79	30 minute 100 year Winter I+45%	42.220	41.685	0.665	0.000	1.61	23.884	2.5	1306.4	SURCHARGED
ML5-30.000	ML5-80	15 minute 100 year Winter I+45%	42.220	42.198	-0.022	0.000	0.64	0.123	0.8	65.4	FLOOD RISK*
ML5-1.012	ML5-81	30 minute 100 year Winter I+45%	41.676	40.902	0.107	0.000	1.09	50.073	2.2	1331.0	SURCHARGED
ML5-1.013	ML5-82	1440 minute 100 year Winter I+45%	41.300	40.594	0.094	0.000	0.11	21.243	1.0	122.2	SURCHARGED
ML5-31.000	ML5-83	15 minute 100 year Winter I+45%	41.682	41.587	-0.095	0.000	0.24	0.000	0.3	58.2	FLOOD RISK
ML5-31.001	ML5-84	15 minute 100 year Winter I+45%	41.241	41.231	-0.010	0.000	0.85	3.465	0.3	119.6	FLOOD RISK
ML5-32.000	ML5-85	15 minute 100 year Winter I+45%	42.283	42.155	-0.128	0.000	0.13	0.000	0.3	36.0	FLOOD RISK
ML5-32.001	ML5-86	15 minute 100 year Winter I+45%	41.799	41.782	-0.017	0.000	0.79	2.268	0.4	164.3	FLOOD RISK
ML5-31.002	ML5-87	15 minute 100 year Winter I+45%	41.058	40.863	0.385	0.000	1.11	1.750	1.3	275.2	FLOOD RISK
ML5-33.000	ML5-88	15 minute 100 year Summer I+45%	41.835	41.685	-0.150	0.000	0.00	0.000	0.0	0.0	OK
ML5-34.000	ML5-89	15 minute 100 year Winter I+45%	48.978	48.974	-0.004	0.000	0.93	0.000	0.5	54.1	FLOOD RISK
ML5-34.001	ML5-90	15 minute 100 year Winter I+45%	48.821	47.491	-0.130	0.000	0.56	0.184	1.3	50.7	OK
ML5-35.000	ML5-91	15 minute 100 year Winter I+45%	48.963	48.938	-0.025	0.000	0.60	0.000	0.9	70.7	FLOOD RISK
ML5-34.002	ML5-92	15 minute 100 year Winter I+45%	48.136	46.990	0.054	0.000	0.88	2.434	1.9	104.7	SURCHARGED
ML5-36.000	ML5-93	15 minute 100 year Winter I+45%	48.136	48.101	-0.035	0.000	0.49	0.000	1.1	70.8	FLOOD RISK
ML5-34.003	ML5-94	15 minute 100 year Winter I+45%	46.913	46.058	0.345	0.000	1.08	3.515	2.3	155.5	SURCHARGED
ML5-37.000	ML5-95	15 minute 100 year Winter I+45%	46.913	46.870	-0.043	0.000	0.41	0.000	1.2	70.5	FLOOD RISK
ML5-34.004	ML5-96	15 minute 100 year Winter I+45%	45.149	43.824	-0.125	0.000	0.76	0.682	2.7	208.1	OK
ML5-38.000	ML5-97	15 minute 100 year Winter I+45%	45.149	45.104	-0.045	0.000	0.38	0.000	1.3	71.3	FLOOD RISK
ML5-34.005	ML5-98	15 minute 100 year Winter I+45%	43.110	41.935	0.025	0.000	0.65	2.057	2.7	260.9	SURCHARGED
ML5-39.000	ML5-99	15 minute 100 year Winter I+45%	48.368	48.356	-0.012	0.000	0.68	0.000	0.3	96.0	FLOOD RISK
ML5-39.001	ML5-100	15 minute 100 year Winter I+45%	47.947	47.926	-0.021	0.000	0.65	9.001	0.4	153.7	FLOOD RISK
ML5-39.002	ML5-101	15 minute 100 year Winter I+45%	46.992	46.975	-0.017	0.000	0.68	3.508	0.5	201.9	FLOOD RISK
ML5-39.003	ML5-102	15 minute 100 year Winter I+45%	45.486	45.472	-0.014	0.000	0.71	2.149	0.6	243.7	FLOOD RISK
ML5-39.004	ML5-103	15 minute 100 year Winter I+45%	43.493	43.490	-0.003	0.000	0.91	1.812	0.6	298.4	FLOOD RISK
ML5-39.005	ML5-104	15 minute 100 year Winter I+45%	41.682	41.685	0.703	3.051	1.46	7.123	1.5	310.9	FLOOD
ML5-34.006	ML5-105	15 minute 100 year Winter I+45%	42.285	41.587	0.655	0.000	1.11	12.675	1.9	528.7	SURCHARGED
ML5-40.000	ML5-106	15 minute 100 year Winter I+45%	43.110	43.074	-0.036	0.000	0.47	0.000	1.1	69.6	FLOOD RISK
ML5-34.007	ML5-107	15 minute 100 year Winter I+45%	41.835	41.259	0.624	0.000	1.59	16.205	1.9	548.9	SURCHARGED
ML5-31.003	ML5-108	15 minute 100 year Winter I+45%	41.673	40.832	0.220	0.000	1.33	19.556	1.7	772.1	SURCHARGED
ML5-41.000	ML5-109	15 minute 100 year Winter I+45%	48.317	46.902	-0.087	0.000	0.63	0.115	1.4	32.1	OK
ML5-41.001	ML5-110	15 minute 100 year Winter I+45%	47.070	45.986	0.246	0.000	0.84	1.656	1.7	50.9	SURCHARGED
ML5-41.002	ML5-111	15 minute 100 year Winter I+45%	45.318	45.000	1.009	0.000	0.91	3.875	1.8	59.4	SURCHARGED
ML5-41.003	ML5-112	15 minute 100 year Winter I+45%	43.281	43.274	1.323	0.000	1.38	4.542	1.8	71.3	FLOOD RISK
ML5-41.004	ML5-113	15 minute 100 year Winter I+45%	42.110	40.888	0.217	0.000	0.75	2.298	1.6	79.6	SURCHARGED
ML5-31.004	ML5-114	360 minute 100 year Winter I+45%	42.073	40.616	0.000	0.000	0.26	10.109	1.3	211.8	OK
ML5-31.005	ML5-115	1440 minute 100 year Winter I+45%	41.300	40.593	0.168	0.000	0.07	12.634	0.9	65.4	SURCHARGED
ML5-42.000	ML5-116	15 minute 100 year Winter I+45%	49.285	49.203	-0.082	0.000	0.45	0.000	0.4	36.6	FLOOD RISK
ML5-42.001	ML5-117	15 minute 100 year Winter I+45%	47.816	47.775	-0.041	0.000	0.61	1.051	0.6	71.2	FLOOD RISK
ML5-43.000	ML5-118	15 minute 100 year Winter I+45%	45.807	45.561	-0.246	0.000	0.04	0.000	0.3	5.3	FLOOD RISK
ML5-43.001	ML5-119	15 minute 100 year Winter I+45%	44.647	44.430	-0.217	0.000	0.09	0.098	0.2	7.7	FLOOD RISK*
ML5-42.002	ML5-120	15 minute 100 year Winter I+45%	44.237	44.202	-0.035	0.000	0.78	1.529	0.5	78.5	FLOOD RISK
ML5-42.003	ML5-121	15 minute 100 year Winter I+45%	43.946	42.546	-0.200	0.000	0.24	0.106	3.8	78.8	OK
ML5-42.004	ML5-122	15 minute 100 year Summer I+45%	41.300	39.900	0.000	0.000	0.96	0.746	1.0	59.5	SURCHARGED*
ML5-1.014	ML5-AB	1440 minute 100 year Winter I+45%	41.300	40.593	0.843	0.000	0.09	6828.646	1.1	18.5	SURCHARGED
ML5-1.015	ML5-123	1440 minute 100 year Winter I+45%	41.300	39.209	-0.404	0.000	0.02	0.111	2.6	18.5	OK

Summary of Results for 15 minute 100 year Winter (SWS-ML05 New)

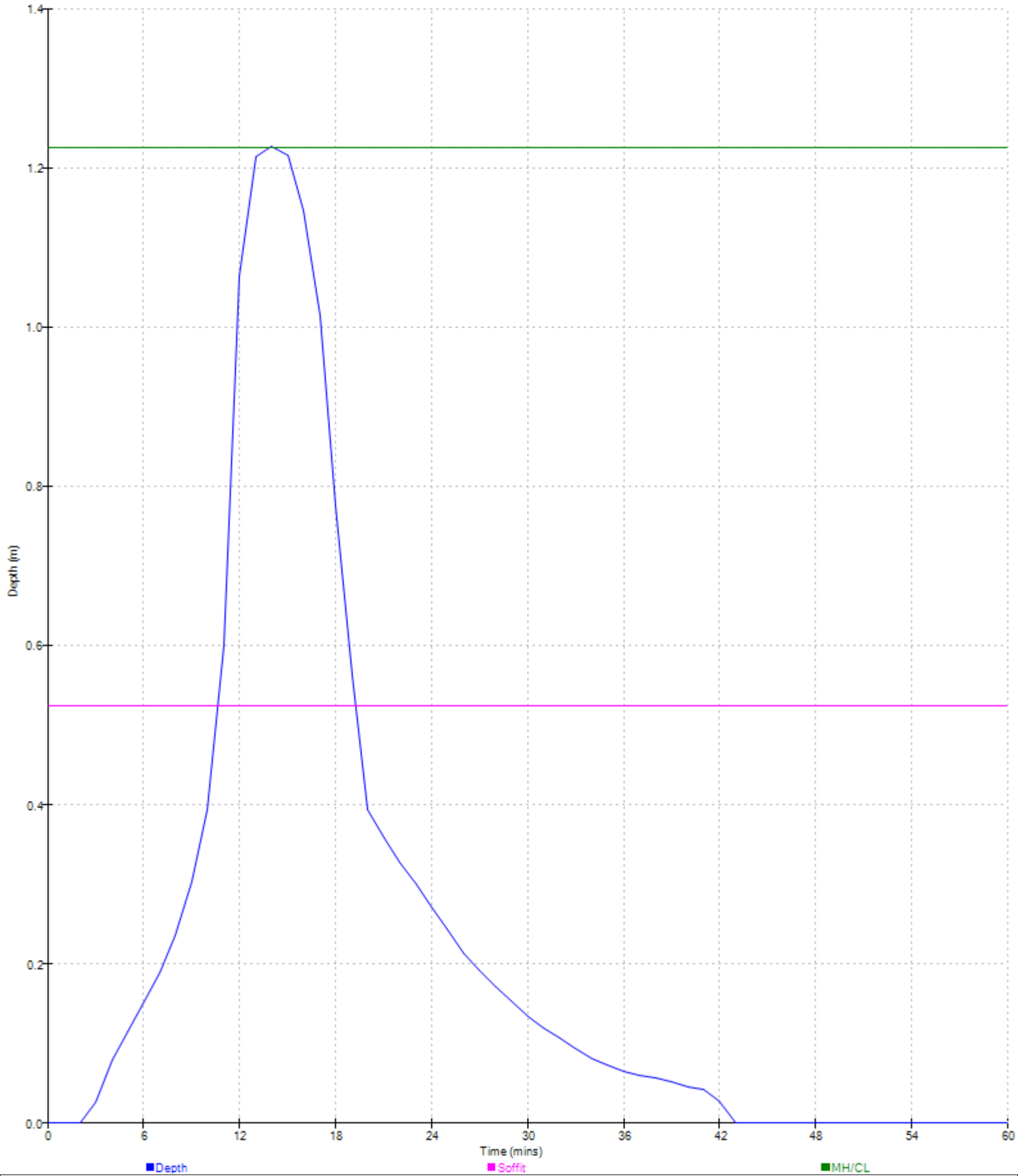
Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-1.000	ML5-01	54.949	54.934	-0.015	0.000	0.82	0.000	0.2	99.3	FLOOD RISK
ML5-1.001	ML5-02	54.715	54.051	0.536	0.000	2.31	1.335	2.4	97.5	SURCHARGED
ML5-2.000	ML5-03	54.949	54.933	-0.016	0.000	0.81	0.000	0.2	99.1	FLOOD RISK
ML5-2.001	ML5-04	54.710	54.027	0.517	0.000	2.32	1.302	2.4	97.3	SURCHARGED
ML5-1.002	ML5-05	55.125	53.331	-0.064	0.000	0.73	1.243	1.8	188.2	OK
ML5-3.000	ML5-06	54.715	54.650	-0.065	0.000	0.40	0.000	0.3	81.7	FLOOD RISK
ML5-3.001	ML5-07	54.178	53.327	0.349	0.000	2.34	1.006	2.1	82.2	SURCHARGED
ML5-4.000	ML5-09	54.710	54.647	-0.063	0.000	0.41	0.000	0.3	77.2	FLOOD RISK
ML5-4.001	ML5-09A	54.252	53.285	0.233	0.000	1.57	0.800	2.0	77.7	SURCHARGED
ML5-1.003	ML5-08	54.609	53.123	0.225	0.000	0.83	10.905	2.4	285.3	SURCHARGED
ML5-5.000	ML5-Dummy 09	54.710	54.510	-0.100	0.000	0.00	0.000	0.0	0.0	OK
ML5-5.001	ML5-10	54.121	54.093	-0.028	0.000	0.54	0.003	1.0	70.5	FLOOD RISK
ML5-5.002	ML5-11	53.411	53.338	-0.073	0.000	0.36	0.149	0.4	89.3	FLOOD RISK
ML5-6.000	ML5-12	53.321	53.145	-0.176	0.000	0.19	0.000	0.4	18.3	FLOOD RISK
ML5-6.001	ML5-13	52.490	52.264	0.474	0.000	0.15	0.901	0.4	16.6	FLOOD RISK
ML5-5.003	ML5-14	53.221	52.261	0.518	0.000	0.82	2.203	1.2	99.6	SURCHARGED
ML5-7.000	ML5-15	54.378	54.358	-0.020	0.000	0.65	0.000	1.2	97.9	FLOOD RISK
ML5-7.001	ML5-16	53.415	53.360	-0.055	0.000	0.46	0.187	0.4	115.0	FLOOD RISK
ML5-8.000	ML5-17	58.698	57.284	-1.414	0.000	0.00	0.000	0.0	0.0	OK
ML5-9.000	ML5-18	57.780	57.570	-0.210	0.000	0.18	0.000	0.2	11.4	FLOOD RISK
ML5-10.000	ML5-19	58.397	58.346	-0.051	0.000	0.69	0.000	0.4	52.0	FLOOD RISK
ML5-11.000	ML5-20	58.032	57.882	-0.150	0.000	0.44	0.000	0.3	68.7	FLOOD RISK
ML5-9.001	ML5-21	57.226	56.726	1.033	0.000	3.66	2.025	3.3	131.6	SURCHARGED
ML5-8.001	ML5-22	56.590	55.728	-0.862	0.000	0.08	0.847	0.6	177.8	OK
ML5-8.002	ML5-23	54.477	53.584	0.307	0.000	0.94	0.755	1.8	170.2	SURCHARGED
ML5-8.003	ML5-24	53.469	52.766	0.497	0.000	1.58	7.880	1.5	168.9	SURCHARGED
ML5-7.002	ML5-25	53.224	52.580	0.381	0.000	0.79	2.457	2.9	231.2	SURCHARGED
ML5-1.004	ML5-26	53.612	52.242	0.596	0.000	1.28	16.847	2.6	558.6	SURCHARGED
ML5-12.000	ML5-27	53.421	53.330	-0.091	0.000	0.27	0.000	0.5	85.0	FLOOD RISK
ML5-13.000	ML5-28	52.525	52.430	-0.095	0.000	0.47	0.000	0.2	21.9	FLOOD RISK
ML5-13.001	ML5-29	52.100	51.680	0.755	0.000	0.71	0.244	0.5	21.3	SURCHARGED
ML5-12.001	ML5-30	52.019	51.660	0.780	0.000	2.46	2.010	2.6	104.1	SURCHARGED
ML5-1.005	ML5-31	52.180	50.682	-0.045	0.000	0.70	6.393	3.4	631.0	OK
ML5-14.000	ML5-32	53.224	53.146	-0.078	0.000	0.29	0.000	0.4	81.4	FLOOD RISK
ML5-14.001	ML5-33	51.791	51.746	-0.045	0.000	0.53	1.668	0.6	173.3	FLOOD RISK
ML5-15.000	ML5-34	52.351	52.137	-0.214	0.000	0.09	0.000	0.2	6.3	FLOOD RISK
ML5-15.001	ML5-35	51.737	51.584	-0.153	0.000	0.25	0.419	0.2	11.8	FLOOD RISK
ML5-16.000	ML5-36	55.327	55.207	-0.120	0.000	0.33	0.000	0.6	44.2	FLOOD RISK
ML5-16.001	ML5-37	52.064	51.879	-0.185	0.000	0.34	0.084	0.4	80.0	FLOOD RISK
ML5-17.000	ML5-38	52.247	52.201	-0.046	0.000	0.64	0.000	0.1	17.5	FLOOD RISK
ML5-17.001	ML5-39	52.124	52.019	-0.105	0.000	0.42	4.038	0.4	39.9	FLOOD RISK
ML5-16.002	ML5-40	50.602	50.525	1.123	0.000	1.92	4.948	1.6	109.4	FLOOD RISK
ML5-18.000	ML5-41	52.328	52.120	-0.208	0.000	0.10	0.000	0.2	5.2	FLOOD RISK
ML5-18.001	ML5-42	51.889	51.721	-0.168	0.000	0.21	0.587	0.2	10.8	FLOOD RISK
ML5-15.002	ML5-43	51.450	50.435	1.081	0.000	1.44	2.635	1.8	123.0	SURCHARGED
ML5-15.003	ML5-44	51.585	50.313	1.075	0.000	1.38	2.106	1.7	112.6	SURCHARGED
ML5-14.002	ML5-45	50.010	49.822	1.012	0.000	1.08	7.878	1.3	257.1	FLOOD RISK
ML5-19.000	ML5-46	52.019	51.957	-0.062	0.000	0.41	0.000	0.5	134.8	FLOOD RISK
ML5-19.001	ML5-47	49.981	49.972	0.791	0.000	1.44	3.590	3.3	128.9	FLOOD RISK
ML5-1.006	ML5-48	50.332	49.789	1.021	0.000	0.98	25.142	3.5	869.9	SURCHARGED
ML5-20.000	ML5-49	49.981	49.911	-0.070	0.000	0.37	0.000	0.5	124.2	FLOOD RISK
ML5-20.001	ML5-50	48.133	48.047	1.114	0.000	1.64	3.058	1.6	116.3	FLOOD RISK
ML5-1.007	ML5-51	48.480	48.014	1.165	0.000	1.11	26.492	3.3	905.0	SURCHARGED
ML5-21.000	ML5-52	50.010	49.925	-0.085	0.000	0.26	0.000	0.5	85.7	FLOOD RISK
ML5-21.001	ML5-53	48.133	48.090	-0.043	0.000	0.54	1.250	0.6	179.8	FLOOD RISK
ML5-21.002	ML5-54	46.331	46.231	0.901	0.000	2.10	2.489	2.4	169.2	FLOOD RISK
ML5-22.000	ML5-55	48.133	48.060	-0.073	0.000	0.36	0.000	0.5	119.9	FLOOD RISK
ML5-22.001	ML5-56	46.305	46.219	0.889	0.000	2.60	3.049	2.8	112.4	FLOOD RISK
ML5-1.008	ML5-57	46.625	46.058	0.831	0.000	1.17	24.400	3.7	1056.7	SURCHARGED
ML5-23.000	ML5-58	46.331	46.260	-0.071	0.000	0.37	0.000	0.5	123.1	FLOOD RISK
ML5-24.000	ML5-59	52.150	52.126	-0.024	0.000	0.68	0.000	0.4	25.5	FLOOD RISK
ML5-24.001	ML5-60	50.911	50.838	-0.073	0.000	0.56	0.642	0.5	56.2	FLOOD RISK
ML5-24.002	ML5-61	49.049	48.075	0.226	0.000	1.75	0.498	1.4	55.3	SURCHARGED
ML5-24.003	ML5-62	49.386	47.920	0.121	0.000	1.86	0.851	1.4	55.6	SURCHARGED
ML5-25.000	ML5-63	52.431	52.212	-0.219	0.000	0.08	0.000	0.3	6.9	FLOOD RISK
ML5-25.001	ML5-64	50.892	50.696	-0.196	0.000	0.14	0.100	0.3	12.4	FLOOD RISK
ML5-24.004	ML5-65	49.411	47.573	-0.196	0.000	0.26	0.139	3.1	67.7	OK
ML5-23.001	ML5-66	44.506	43.425	0.119	0.000	0.74	1.447	1.3	184.6	SURCHARGED
ML5-26.000	ML5-67	46.305	46.235	-0.070	0.000	0.38	0.000	0.5	126.2	FLOOD RISK
ML5-26.001	ML5-68	44.479	44.169	0.669	0.000	1.89	1.571	3.1	125.1	SURCHARGED
ML5-1.009	ML5-69	44.773	43.403	0.157	0.000	0.88	12.935	3.6	1242.9	SURCHARGED
ML5-27.000	ML5-70	44.479	44.348	-0.131	0.000	0.11	0.000	0.4	37.1	FLOOD RISK
ML5-27.001	ML5-71	43.864	43.846	-0.018	0.000	0.71	1.713	1.4	123.1	FLOOD RISK
ML5-27.002	ML5-72	42.498	42.146	0.348	0.000	0.42	1.600	1.8	123.4	SURCHARGED
ML5-28.000	ML5-73	44.706	44.580	-0.126	0.000	0.13	0.000	0.4	46.7	FLOOD RISK
ML5-28.001	ML5-74	43.996	43.988	-0.008	0.000	0.85	1.557	1.6	163.6	FLOOD RISK
ML5-28.002	ML5-75	42.283	42.142	0.559	0.000	0.51	2.329	1.1	158.8	FLOOD RISK

Summary of Results for 15 minute 100 year Winter (SWS-ML05 New)

PN	US/MH Name	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML5-1.010	ML5-76	42.720	42.136	0.616	0.000	0.99	38.286	2.7	1330.6	SURCHARGED
ML5-29.000	ML5-77	42.498	42.388	-0.110	0.000	0.19	0.000	0.3	45.3	FLOOD RISK
ML5-29.001	ML5-78	42.092	41.690	0.298	0.000	0.57	0.916	2.1	44.9	SURCHARGED
ML5-1.011	ML5-79	42.220	41.672	0.652	0.000	1.63	23.839	2.5	1317.3	SURCHARGED
ML5-30.000	ML5-80	42.220	42.198	-0.022	0.000	0.65	0.123	0.8	65.6	FLOOD RISK*
ML5-1.012	ML5-81	41.676	40.896	0.101	0.000	1.08	49.942	2.2	1325.8	SURCHARGED
ML5-1.013	ML5-82	41.300	40.550	0.050	0.000	1.17	20.482	2.1	1321.7	SURCHARGED
ML5-31.000	ML5-83	41.682	41.587	-0.095	0.000	0.24	0.000	0.3	58.3	FLOOD RISK
ML5-31.001	ML5-84	41.241	41.231	-0.010	0.000	0.86	3.471	0.3	119.9	FLOOD RISK
ML5-32.000	ML5-85	42.283	42.155	-0.128	0.000	0.13	0.000	0.3	36.1	FLOOD RISK
ML5-32.001	ML5-86	41.799	41.782	-0.017	0.000	0.79	2.272	0.4	164.7	FLOOD RISK
ML5-31.002	ML5-87	41.058	40.862	0.384	0.000	1.12	1.714	1.3	277.8	FLOOD RISK
ML5-33.000	ML5-88	41.835	41.685	-0.150	0.000	0.00	0.000	0.0	0.0	OK
ML5-34.000	ML5-89	48.978	48.975	-0.003	0.000	0.93	0.000	0.5	54.3	FLOOD RISK
ML5-34.001	ML5-90	48.821	47.491	-0.130	0.000	0.56	0.184	1.3	50.9	OK
ML5-35.000	ML5-91	48.963	48.938	-0.025	0.000	0.60	0.000	0.9	70.9	FLOOD RISK
ML5-34.002	ML5-92	48.136	46.994	0.058	0.000	0.88	2.480	1.9	104.8	SURCHARGED
ML5-36.000	ML5-93	48.136	48.102	-0.034	0.000	0.49	0.000	1.1	71.0	FLOOD RISK
ML5-34.003	ML5-94	46.913	46.060	0.347	0.000	1.09	3.530	2.3	155.6	SURCHARGED
ML5-37.000	ML5-95	46.913	46.870	-0.043	0.000	0.41	0.000	1.2	70.7	FLOOD RISK
ML5-34.004	ML5-96	45.149	43.824	-0.125	0.000	0.76	0.684	2.7	208.4	OK
ML5-38.000	ML5-97	45.149	45.104	-0.045	0.000	0.39	0.000	1.3	71.4	FLOOD RISK
ML5-34.005	ML5-98	43.110	41.937	0.027	0.000	0.65	2.073	2.7	262.0	SURCHARGED
ML5-39.000	ML5-99	48.368	48.356	-0.012	0.000	0.68	0.000	0.3	96.2	FLOOD RISK
ML5-39.001	ML5-100	47.947	47.927	-0.020	0.000	0.65	9.020	0.4	154.0	FLOOD RISK
ML5-39.002	ML5-101	46.992	46.975	-0.017	0.000	0.68	3.514	0.6	202.3	FLOOD RISK
ML5-39.003	ML5-102	45.486	45.472	-0.014	0.000	0.71	2.152	0.6	244.3	FLOOD RISK
ML5-39.004	ML5-103	43.493	43.490	-0.003	0.000	0.92	1.815	0.6	299.6	FLOOD RISK
ML5-39.005	ML5-104	41.682	41.684	0.702	3.204	1.39	4.214	1.4	295.9	FLOOD
ML5-34.006	ML5-105	42.285	41.581	0.649	0.000	1.11	12.630	1.9	525.1	SURCHARGED
ML5-40.000	ML5-106	43.110	43.074	-0.036	0.000	0.48	0.000	1.1	69.8	FLOOD RISK
ML5-34.007	ML5-107	41.835	41.255	0.620	0.000	1.58	16.195	1.9	545.1	SURCHARGED
ML5-31.003	ML5-108	41.673	40.831	0.219	0.000	1.33	19.552	1.7	771.0	SURCHARGED
ML5-41.000	ML5-109	48.317	46.902	-0.087	0.000	0.64	0.115	1.4	32.2	OK
ML5-41.001	ML5-110	47.070	45.993	0.253	0.000	0.84	1.688	1.7	50.8	SURCHARGED
ML5-41.002	ML5-111	45.318	45.004	1.013	0.000	0.91	3.890	1.8	59.4	SURCHARGED
ML5-41.003	ML5-112	43.281	43.278	1.327	0.000	1.38	4.554	1.8	71.3	FLOOD RISK
ML5-41.004	ML5-113	42.110	40.891	0.220	0.000	0.75	2.311	1.6	79.8	SURCHARGED
ML5-31.004	ML5-114	42.073	40.601	-0.015	0.000	1.00	9.994	1.8	828.0	OK
ML5-31.005	ML5-115	41.300	40.197	-0.228	0.000	0.87	7.879	2.0	827.7	OK
ML5-42.000	ML5-116	49.285	49.203	-0.082	0.000	0.45	0.000	0.4	36.7	FLOOD RISK
ML5-42.001	ML5-117	47.816	47.775	-0.041	0.000	0.61	1.054	0.6	71.3	FLOOD RISK
ML5-43.000	ML5-118	45.807	45.561	-0.246	0.000	0.04	0.000	0.3	5.3	FLOOD RISK
ML5-43.001	ML5-119	44.647	44.430	-0.217	0.000	0.09	0.098	0.2	7.7	FLOOD RISK*
ML5-42.002	ML5-120	44.237	44.203	-0.034	0.000	0.78	1.533	0.5	78.7	FLOOD RISK
ML5-42.003	ML5-121	43.946	42.546	-0.200	0.000	0.24	0.106	3.9	79.0	OK
ML5-42.004	ML5-122	41.300	39.900	0.000	0.000	1.05	0.947	1.1	65.1	SURCHARGED*
ML5-1.014	ML5-AB	41.300	39.772	0.022	0.000	0.06	2199.854	1.0	11.5	SURCHARGED
ML5-1.015	ML5-123	41.300	39.193	-0.420	0.000	0.01	0.067	2.6	11.5	OK

Graphs for Pipe ML5-39.005 US/MH ML5-104 (SWS-ML05 New)
15 minute 100 year Winter
Status: FLOOD



Catchment 6 Basin 6 – Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:30 no flooding check
All pipes pass for 1:30
1:100 flooding check
No Flooding for 1:100

Attenuation
100 + CC Peak Water Level:
44.124m Cover level:
44.500m
Freeboard: achieved

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SWS-ML06

Pipe Sizes Circular Manhole Sizes Adoptable

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 610500 313350 TG 10500 13350	PIMP (%)	100
C (1km)	-0.024	Add Flow / Climate Change (%)	20
D1 (1km)	0.305	Minimum Backdrop Height (m)	0.600
D2 (1km)	0.305	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.270	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.313	Min Vel for Auto Design only (m/s)	1.00
F (1km)	2.473	Min Slope for Optimisation (1:X)	1000
Maximum Rainfall (mm/hr)	250		

Designed with Level Soffits

Time Area Diagram for SWS-ML06

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.682	4-8	0.619	8-12	0.385	12-16	0.256	16-20	0.049	20-24	0.108

Total Area Contributing (ha) = 2.099

Total Pipe Volume (m³) = 527.857

Network Design Table for SWS-ML06

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML6-1.000	124.333	0.443	280.7	0.069	5.00	0.0		0.015	5 \/	150	1:5 V	
ML6-1.001	63.234	1.277	49.5	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML6-1.002	63.234	0.400	158.1	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML6-1.003	13.696	0.090	152.2	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
ML6-1.004	43.365	0.786	55.2	0.000	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML6-1.005	100.029	1.298	77.1	0.000	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML6-2.000	65.410	0.669	97.8	0.054	5.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-2.001	100.001	0.908	110.1	0.162	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-2.002	56.780	0.686	82.8	0.094	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-2.003	43.208	0.616	70.1	0.066	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-2.004	100.044	1.442	69.4	0.145	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-3.000	94.771	0.147	644.7	0.143	5.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-3.001	99.701	0.787	126.7	0.157	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-3.002	55.392	0.653	84.8	0.092	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-3.003	44.636	0.653	68.4	0.071	0.00	0.0		0.050	2V	-2	Pipe/Conduit	
ML6-3.004	99.996	1.445	69.2	0.166	0.00	0.0		0.050	2V	-2	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML6-1.000	48.24	7.97	48.824	0.069	0.0	0.0	1.8	0.70	78.6	10.8
ML6-1.001	46.00	8.53	47.106	0.069	0.0	0.0	1.8	1.86	74.1	10.8
ML6-1.002	42.54	9.55	45.829	0.069	0.0	0.0	1.8	1.04	41.2	10.8
ML6-1.003	41.88	9.76	45.429	0.069	0.0	0.0	1.8	1.06	42.0	10.8
ML6-1.004	40.54	10.23	45.339	0.069	0.0	0.0	1.8	1.55	61.5	10.8
ML6-1.005	37.87	11.29	44.478	0.069	0.0	0.0	1.8	1.58	111.7	10.8
ML6-2.000	51.78	7.19	48.801	0.054	0.0	0.0	1.5	0.50	245.9	9.2
ML6-2.001	39.16	10.76	48.132	0.217	0.0	0.0	4.6	0.47	231.7	27.6
ML6-2.002	35.26	12.51	47.224	0.311	0.0	0.0	5.9	0.54	267.2	35.6
ML6-2.003	33.04	13.74	46.538	0.377	0.0	0.0	6.7	0.59	290.3	40.5
ML6-2.004	29.01	16.57	45.922	0.523	0.0	0.0	8.2	0.59	291.9	49.3
ML6-3.000	34.03	13.17	48.168	0.143	0.0	0.0	2.6	0.19	95.7	15.8
ML6-3.001	28.52	16.97	48.021	0.300	0.0	0.0	4.6	0.44	216.0	27.8
ML6-3.002	26.66	18.71	47.234	0.392	0.0	0.0	5.7	0.53	264.0	33.9
ML6-3.003	25.48	19.96	46.581	0.463	0.0	0.0	6.4	0.59	294.1	38.3
ML6-3.004	23.24	22.78	45.928	0.628	0.0	0.0	7.9	0.59	292.2	47.5

Network Design Table for SWS-ML06

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
ML6-4.000	44.838	0.642	69.8	0.000	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML6-4.001	99.817	1.642	60.8	0.000	0.00	0.0	1.500		o	225	Pipe/Conduit	
ML6-5.000	79.203	0.506	156.5	0.047	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-5.001	100.647	1.028	97.9	0.054	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-5.002	24.831	2.500	9.9	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML6-6.000	25.358	0.387	65.5	0.011	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-6.001	25.240	3.100	8.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML6-6.002	23.693	0.217	109.2	0.039	0.00	0.0	1.500		o	300	Pipe/Conduit	
ML6-3.005	25.841	0.084	307.6	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML6-7.000	23.397	0.161	145.3	0.043	5.00	0.0	1.500		o	225	Pipe/Conduit	
ML6-1.006	16.359	0.053	307.6	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML6-1.007	14.751	0.046	320.7	0.000	0.00	0.0	0.600		o	675	Pipe/Conduit	
ML6-8.000	74.973	1.194	62.8	0.012	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-8.001	71.806	3.649	19.7	0.012	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-8.002	38.366	4.570	8.4	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML6-1.008	27.929	0.400	69.8	0.175	0.00	0.0	0.600		o	600	Pipe/Conduit	
ML6-9.000	33.767	2.636	12.8	0.033	5.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-9.001	56.156	3.795	14.8	0.036	0.00	0.0		0.080	1 _/	300	1:1 Ditch	
ML6-9.002	55.059	0.619	88.9	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
ML6-1.009	9.388	0.094	100.0	0.418	0.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
ML6-4.000	62.07	5.54	45.542	0.000	0.0	0.0	0.0	1.37	54.7	0.0
ML6-4.001	54.57	6.67	44.900	0.000	0.0	0.0	0.0	1.47	58.6	0.0
ML6-5.000	42.55	9.55	50.409	0.047	0.0	0.0	1.1	0.29	52.3	6.4
ML6-5.001	32.42	14.11	49.903	0.101	0.0	0.0	1.8	0.37	66.1	10.6
ML6-5.002	32.29	14.20	45.683	0.101	0.0	0.0	1.8	5.02	354.6	10.6
ML6-6.000	59.15	5.94	48.859	0.011	0.0	0.0	0.4	0.45	80.8	2.2
ML6-6.001	58.63	6.02	46.500	0.011	0.0	0.0	0.4	5.54	391.8	2.2
ML6-6.002	56.70	6.32	43.400	0.051	0.0	0.0	1.6	1.33	93.8	9.4
ML6-3.005	23.03	23.09	43.183	0.780	0.0	0.0	9.7	1.38	391.1	58.3
ML6-7.000	63.13	5.41	43.260	0.043	0.0	0.0	1.5	0.95	37.8	8.7
ML6-1.006	22.89	23.29	43.099	1.413	0.0	0.0	17.5	1.38	391.1	105.1
ML6-1.007	22.78	23.46	43.046	1.413	0.0	0.0	17.5	1.46	521.8	105.1
ML6-8.000	49.29	7.73	52.713	0.012	0.0	0.0	0.3	0.46	82.5	2.0
ML6-8.001	43.70	9.19	51.519	0.024	0.0	0.0	0.6	0.82	147.4	3.4
ML6-8.002	43.31	9.30	47.870	0.024	0.0	0.0	0.6	5.46	385.8	3.4
ML6-1.008	22.67	23.62	43.000	1.613	0.0	0.0	19.8	2.92	824.8	118.8
ML6-9.000	61.99	5.55	50.850	0.033	0.0	0.0	1.1	1.02	182.7	6.6
ML6-9.001	55.30	6.55	48.214	0.068	0.0	0.0	2.0	0.94	170.0	12.3
ML6-9.002	52.29	7.10	43.219	0.068	0.0	0.0	2.0	1.67	117.9	12.3
ML6-1.009	22.57	23.77	42.500	2.099	0.0	0.0	25.7	1.00	17.8«	153.9

Conduit Sections for SWS-ML06

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \/ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m^2)
-2	2V	4001	200			0.487	0.495

Manhole Schedules for SWS-ML06

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)
ML6-01	48.974	0.150	Open Manhole	10	ML6-1.000	48.824	150				
ML6-02	48.532	1.426	Open Manhole	1050	ML6-1.001	47.106	225	ML6-1.000	48.381	150	1200
ML6-03	48.001	2.172	Open Manhole	1500	ML6-1.002	45.829	225	ML6-1.001	45.829	225	
ML6-04	47.254	1.825	Open Manhole	1500	ML6-1.003	45.429	225	ML6-1.002	45.429	225	
ML6-05	46.911	1.572	Open Manhole	1500	ML6-1.004	45.339	225	ML6-1.003	45.339	225	
ML6-06	46.342	1.864	Open Manhole	1500	ML6-1.005	44.478	300	ML6-1.004	44.553	225	
ML6-07	49.127	0.326	Open Manhole	10	ML6-2.000	48.801	-2				
ML6-08	48.424	0.292	Open Manhole	10	ML6-2.001	48.132	-2	ML6-2.000	48.132	-2	
ML6-09	47.516	0.292	Open Manhole	10	ML6-2.002	47.224	-2	ML6-2.001	47.224	-2	
ML6-10	46.830	0.292	Open Manhole	10	ML6-2.003	46.538	-2	ML6-2.002	46.538	-2	
ML6-11	46.255	0.333	Open Manhole	10	ML6-2.004	45.922	-2	ML6-2.003	45.922	-2	
ML6-12	48.460	0.292	Open Manhole	10	ML6-3.000	48.168	-2				
ML6-13	48.313	0.292	Open Manhole	10	ML6-3.001	48.021	-2	ML6-3.000	48.021	-2	
ML6-14	47.525	0.291	Open Manhole	10	ML6-3.002	47.234	-2	ML6-3.001	47.234	-2	
ML6-15	46.857	0.276	Open Manhole	10	ML6-3.003	46.581	-2	ML6-3.002	46.581	-2	
ML6-16	46.220	0.292	Open Manhole	10	ML6-3.004	45.928	-2	ML6-3.003	45.928	-2	
ML6-17	47.059	1.517	Open Manhole	1500	ML6-4.000	45.542	225				
ML6-18	46.417	1.517	Open Manhole	1500	ML6-4.001	44.900	225	ML6-4.000	44.900	225	
ML6-19	50.709	0.300	Open Manhole	10	ML6-5.000	50.409	300				
ML6-20	50.203	0.300	Open Manhole	10	ML6-5.001	49.903	300	ML6-5.000	49.903	300	
ML6-21	48.856	3.173	Open Manhole	1050	ML6-5.002	45.683	300	ML6-5.001	48.875	300	3192
ML6-22	49.159	0.300	Open Manhole	10	ML6-6.000	48.859	300				
ML6-23	48.772	2.272	Open Manhole	10	ML6-6.001	46.500	300	ML6-6.000	48.472	300	1972
ML6-24	44.600	1.200	Open Manhole	1200	ML6-6.002	43.400	300	ML6-6.001	43.400	300	
ML6-25	44.775	1.592	Open Manhole	1500	ML6-3.005	43.183	600	ML6-3.004	44.483	-2	900
								ML6-4.001	43.258	225	
								ML6-5.002	43.183	300	
								ML6-6.002	43.183	300	
ML6-26	44.585	1.325	Open Manhole	1200	ML6-7.000	43.260	225				
ML6-27	44.772	1.673	Open Manhole	1500	ML6-1.006	43.099	600	ML6-1.005	43.180	300	
								ML6-2.004	44.480	-2	981
								ML6-3.005	43.099	600	
								ML6-7.000	43.099	225	
ML6-28	44.631	1.585	Open Manhole	1500	ML6-1.007	43.046	675	ML6-1.006	43.046	600	
ML6-29	53.013	0.300	Open Manhole	10	ML6-8.000	52.713	300				
ML6-30	51.819	0.300	Open Manhole	10	ML6-8.001	51.519	300	ML6-8.000	51.519	300	
ML6-31	50.370	2.500	Open Manhole	10	ML6-8.002	47.870	300	ML6-8.001	47.870	300	
ML6-FB	44.500	1.500	Open Manhole	1500	ML6-1.008	43.000	600	ML6-1.007	43.000	675	
								ML6-8.002	43.300	300	
ML6-32	51.150	0.300	Open Manhole	10	ML6-9.000	50.850	300				
ML6-33	48.514	0.300	Open Manhole	10	ML6-9.001	48.214	300	ML6-9.000	48.214	300	
ML6-34	44.706	1.487	Open Manhole	1050	ML6-9.002	43.219	300	ML6-9.001	44.419	300	1200
ML6-AB	44.500	2.000	Open Manhole	1500	ML6-1.009	42.500	150	ML6-1.008	42.600	600	550
								ML6-9.002	42.600	300	250
ML6-	44.500	2.094	Open Manhole	0		OUTFALL		ML6-1.009	42.406	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML6-01	13997.728	523798.899	13997.728	523798.899	Required	
ML6-02	13933.331	523692.543	13933.331	523692.543	Required	
ML6-03	13901.551	523637.874	13901.551	523637.874	Required	
ML6-04	13869.770	523583.206	13869.770	523583.206	Required	

Manhole Schedules for SWS-ML06

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML6-05	13857.713	523589.702	13857.713	523589.702	Required	
ML6-06	13835.440	523552.494	13835.440	523552.494	Required	
ML6-07	13971.668	523780.291	13971.668	523780.291	Required	
ML6-08	13937.703	523724.391	13937.703	523724.391	Required	
ML6-09	13887.091	523638.144	13887.091	523638.144	Required	
ML6-10	13858.428	523589.130	13858.428	523589.130	Required	
ML6-11	13836.616	523551.832	13836.616	523551.832	Required	
ML6-12	14008.539	523792.516	14008.539	523792.516	Required	
ML6-13	13959.446	523711.451	13959.446	523711.451	Required	
ML6-14	13909.156	523625.362	13909.156	523625.362	Required	
ML6-15	13881.434	523577.406	13881.434	523577.406	Required	
ML6-16	13858.700	523538.993	13858.700	523538.993	Required	
ML6-17	13882.502	523576.798	13882.502	523576.798	Required	
ML6-18	13859.872	523538.091	13859.872	523538.091	Required	
ML6-19	13919.617	523599.301	13919.617	523599.301	Required	
ML6-20	13880.538	523530.410	13880.538	523530.410	Required	
ML6-21	13831.116	523442.733	13831.116	523442.733	Required	
ML6-22	13830.557	523441.603	13830.557	523441.603	Required	
ML6-23	13818.131	523419.499	13818.131	523419.499	Required	
ML6-24	13796.313	523432.190	13796.313	523432.190	Required	
ML6-25	13808.334	523452.608	13808.334	523452.608	Required	
ML6-26	13774.465	523445.182	13774.465	523445.182	Required	
ML6-27	13785.970	523465.555	13785.970	523465.555	Required	
ML6-28	13774.829	523477.534	13774.829	523477.534	Required	
ML6-29	13757.502	523580.584	13757.502	523580.584	Required	
ML6-30	13728.455	523514.707	13728.455	523514.707	Required	

Manhole Schedules for SWS-ML06

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
ML6-31	13752.021	523454.645	13752.021	523454.645	Required	
ML6-FB	13766.935	523489.994	13766.935	523489.994	Required	
ML6-32	13856.957	523631.975	13856.957	523631.975	Required	
ML6-33	13848.783	523599.213	13848.783	523599.213	Required	
ML6-34	13816.704	523553.121	13816.704	523553.121	Required	
ML6-AB	13775.530	523516.568	13775.530	523516.568	Required	
ML6-	13778.950	523525.311			No Entry	

PIPELINE SCHEDULES for SWS-ML06

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)
ML6-1.000	5 \/	150	ML6-01	48.974	48.824	0.000	Open Manhole	10
ML6-1.001	o	225	ML6-02	48.532	47.106	1.201	Open Manhole	1050
ML6-1.002	o	225	ML6-03	48.001	45.829	1.947	Open Manhole	1500
ML6-1.003	o	225	ML6-04	47.254	45.429	1.600	Open Manhole	1500
ML6-1.004	o	225	ML6-05	46.911	45.339	1.347	Open Manhole	1500
ML6-1.005	o	300	ML6-06	46.342	44.478	1.564	Open Manhole	1500
ML6-2.000	2V	-2	ML6-07	49.127	48.801	0.126	Open Manhole	10
ML6-2.001	2V	-2	ML6-08	48.424	48.132	0.092	Open Manhole	10
ML6-2.002	2V	-2	ML6-09	47.516	47.224	0.092	Open Manhole	10
ML6-2.003	2V	-2	ML6-10	46.830	46.538	0.092	Open Manhole	10
ML6-2.004	2V	-2	ML6-11	46.255	45.922	0.133	Open Manhole	10
ML6-3.000	2V	-2	ML6-12	48.460	48.168	0.092	Open Manhole	10
ML6-3.001	2V	-2	ML6-13	48.313	48.021	0.092	Open Manhole	10
ML6-3.002	2V	-2	ML6-14	47.525	47.234	0.091	Open Manhole	10
ML6-3.003	2V	-2	ML6-15	46.857	46.581	0.076	Open Manhole	10
ML6-3.004	2V	-2	ML6-16	46.220	45.928	0.092	Open Manhole	10
ML6-4.000	o	225	ML6-17	47.059	45.542	1.292	Open Manhole	1500
ML6-4.001	o	225	ML6-18	46.417	44.900	1.292	Open Manhole	1500
ML6-5.000	1 _/	300	ML6-19	50.709	50.409	0.000	Open Manhole	10
ML6-5.001	1 _/	300	ML6-20	50.203	49.903	0.000	Open Manhole	10
ML6-5.002	o	300	ML6-21	48.856	45.683	2.873	Open Manhole	1050
ML6-6.000	1 _/	300	ML6-22	49.159	48.859	0.000	Open Manhole	10
ML6-6.001	o	300	ML6-23	48.772	46.500	1.972	Open Manhole	10
ML6-6.002	o	300	ML6-24	44.600	43.400	0.900	Open Manhole	1200
ML6-3.005	o	600	ML6-25	44.775	43.183	0.992	Open Manhole	1500
ML6-7.000	o	225	ML6-26	44.585	43.260	1.100	Open Manhole	1200
ML6-1.006	o	600	ML6-27	44.772	43.099	1.073	Open Manhole	1500
ML6-1.007	o	675	ML6-28	44.631	43.046	0.910	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)
ML6-1.000	124.333	280.7	ML6-02	48.532	48.381	0.001	Open Manhole	1050
ML6-1.001	63.234	49.5	ML6-03	48.001	45.829	1.947	Open Manhole	1500
ML6-1.002	63.234	158.1	ML6-04	47.254	45.429	1.600	Open Manhole	1500
ML6-1.003	13.696	152.2	ML6-05	46.911	45.339	1.347	Open Manhole	1500
ML6-1.004	43.365	55.2	ML6-06	46.342	44.553	1.564	Open Manhole	1500
ML6-1.005	100.029	77.1	ML6-27	44.772	43.180	1.292	Open Manhole	1500
ML6-2.000	65.410	97.8	ML6-08	48.424	48.132	0.092	Open Manhole	10
ML6-2.001	100.001	110.1	ML6-09	47.516	47.224	0.092	Open Manhole	10
ML6-2.002	56.780	82.8	ML6-10	46.830	46.538	0.092	Open Manhole	10
ML6-2.003	43.208	70.1	ML6-11	46.255	45.922	0.133	Open Manhole	10
ML6-2.004	100.044	69.4	ML6-27	44.772	44.480	0.092	Open Manhole	1500
ML6-3.000	94.771	644.7	ML6-13	48.313	48.021	0.092	Open Manhole	10
ML6-3.001	99.701	126.7	ML6-14	47.525	47.234	0.091	Open Manhole	10
ML6-3.002	55.392	84.8	ML6-15	46.857	46.581	0.076	Open Manhole	10
ML6-3.003	44.636	68.4	ML6-16	46.220	45.928	0.092	Open Manhole	10
ML6-3.004	99.996	69.2	ML6-25	44.775	44.483	0.092	Open Manhole	1500
ML6-4.000	44.838	69.8	ML6-18	46.417	44.900	1.292	Open Manhole	1500
ML6-4.001	99.817	60.8	ML6-25	44.775	43.258	1.292	Open Manhole	1500
ML6-5.000	79.203	156.5	ML6-20	50.203	49.903	0.000	Open Manhole	10
ML6-5.001	100.647	97.9	ML6-21	48.856	48.875	-0.319	Open Manhole	1050
ML6-5.002	24.831	9.9	ML6-25	44.775	43.183	1.292	Open Manhole	1500
ML6-6.000	25.358	65.5	ML6-23	48.772	48.472	0.000	Open Manhole	10
ML6-6.001	25.240	8.1	ML6-24	44.600	43.400	0.900	Open Manhole	1200
ML6-6.002	23.693	109.2	ML6-25	44.775	43.183	1.292	Open Manhole	1500
ML6-3.005	25.841	307.6	ML6-27	44.772	43.099	1.073	Open Manhole	1500
ML6-7.000	23.397	145.3	ML6-27	44.772	43.099	1.448	Open Manhole	1500
ML6-1.006	16.359	307.6	ML6-28	44.631	43.046	0.985	Open Manhole	1500
ML6-1.007	14.751	320.7	ML6-FB	44.500	43.000	0.825	Open Manhole	1500

PIPELINE SCHEDULES for SWS-ML06

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)
ML6-8.000	1 _/	300	ML6-29	53.013	52.713	0.000	Open Manhole	10
ML6-8.001	1 _/	300	ML6-30	51.819	51.519	0.000	Open Manhole	10
ML6-8.002	o	300	ML6-31	50.370	47.870	2.200	Open Manhole	10
ML6-1.008	o	600	ML6-FB	44.500	43.000	0.900	Open Manhole	1500
ML6-9.000	1 _/	300	ML6-32	51.150	50.850	0.000	Open Manhole	10
ML6-9.001	1 _/	300	ML6-33	48.514	48.214	0.000	Open Manhole	10
ML6-9.002	o	300	ML6-34	44.706	43.219	1.187	Open Manhole	1050
ML6-1.009	o	150	ML6-AB	44.500	42.500	1.850	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)
ML6-8.000	74.973	62.8	ML6-30	51.819	51.519	0.000	Open Manhole	10
ML6-8.001	71.806	19.7	ML6-31	50.370	47.870	2.200	Open Manhole	10
ML6-8.002	38.366	8.4	ML6-FB	44.500	43.300	0.900	Open Manhole	1500
ML6-1.008	27.929	69.8	ML6-AB	44.500	42.600	1.300	Open Manhole	1500
ML6-9.000	33.767	12.8	ML6-33	48.514	48.214	0.000	Open Manhole	10
ML6-9.001	56.156	14.8	ML6-34	44.706	44.419	-0.013	Open Manhole	1050
ML6-9.002	55.059	88.9	ML6-AB	44.500	42.600	1.600	Open Manhole	1500
ML6-1.009	9.388	100.0	ML6-	44.500	42.406	1.944	Open Manhole	0

Free Flowing Outfall Details for SWS-ML06

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
ML6-1.009	ML6-	44.500	42.406	0.000	0	0

Online Controls for SWS-ML06

Hydro-Brake® Optimum Manhole: ML6-AB, DS/PN: ML6-1.009, Volume (m³): 14.8

Unit Reference	MD-SHE-0086-4000-1600-4000	Sump Available	Yes
Design Head (m)	1.600	Diameter (mm)	86
Design Flow (l/s)	4.0	Invert Level (m)	42.500
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
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)	1.600	4.0	Kick-Flo®	0.767	2.8
Flush-Flo™	0.375	3.6	Mean Flow over Head Range	-	3.3

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	2.6	0.600	3.4	1.600	4.0	2.600	5.0	5.000	6.8	7.500	8.2
0.200	3.3	0.800	2.9	1.800	4.2	3.000	5.4	5.500	7.1	8.000	8.5
0.300	3.5	1.000	3.2	2.000	4.4	3.500	5.8	6.000	7.4	8.500	8.8
0.400	3.6	1.200	3.5	2.200	4.6	4.000	6.1	6.500	7.7	9.000	9.0
0.500	3.5	1.400	3.8	2.400	4.8	4.500	6.5	7.000	8.0	9.500	9.2

Offline Controls for SWS-ML06

Pipe Manhole: ML6-10, DS/PN: ML6-2.003, Loop to PN: ML6-1.004

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	46.538
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML6-11, DS/PN: ML6-2.004, Loop to PN: ML6-1.005

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	45.922
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML6-15, DS/PN: ML6-3.003, Loop to PN: ML6-4.000

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	46.581
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Pipe Manhole: ML6-16, DS/PN: ML6-3.004, Loop to PN: ML6-4.001

Diameter (m)	0.225	Length (m)	1.000	Coefficient of Contraction	0.600
Section Type	Pipe/Conduit	Roughness k (mm)	0.600	Upstream Invert Level (m)	45.928
Slope (1:X)	40.0	Entry Loss Coefficient	0.500		

Storage Structures for SWS-ML06

Tank or Pond Manhole: ML6-FB, DS/PN: ML6-1.008

Invert Level (m) 43.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	60.8	1.500	267.1

Tank or Pond Manhole: ML6-AB, DS/PN: ML6-1.009

Invert Level (m) 42.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	931.3	2.000	1743.0

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML06

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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 4 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s)	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
Climate Change (%)	20

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML6-1.000	ML6-01	15 minute 1 year Winter I+20%	48.974	48.897	-0.077	0.000	0.15	0.000	0.4	11.5	FLOOD RISK
ML6-1.001	ML6-02	15 minute 1 year Winter I+20%	48.532	47.166	-0.165	0.000	0.16	0.062	1.4	11.2	OK
ML6-1.002	ML6-03	15 minute 1 year Winter I+20%	48.001	45.911	-0.143	0.000	0.27	0.163	0.9	10.7	OK
ML6-1.003	ML6-04	15 minute 1 year Winter I+20%	47.254	45.512	-0.142	0.000	0.29	0.225	0.8	10.8	OK
ML6-1.004	ML6-05	15 minute 1 year Winter I+20%	46.911	45.417	-0.147	0.000	0.26	0.201	1.3	15.7	OK
ML6-1.005	ML6-06	15 minute 1 year Winter I+20%	46.342	44.568	-0.210	0.000	0.19	0.151	1.2	20.8	OK
ML6-2.000	ML6-07	15 minute 1 year Winter I+20%	49.127	48.836	-0.165	0.000	0.03	0.000	0.2	8.4	FLOOD RISK
ML6-2.001	ML6-08	15 minute 1 year Winter I+20%	48.424	48.206	-0.126	0.000	0.12	0.493	0.3	27.1	FLOOD RISK
ML6-2.002	ML6-09	15 minute 1 year Winter I+20%	47.516	47.301	-0.123	0.000	0.14	0.579	0.3	37.0	FLOOD RISK
ML6-2.003	ML6-10	15 minute 1 year Winter I+20%	46.830	46.612	-0.126	0.000	0.13	0.417	0.4	38.3	FLOOD RISK
ML6-2.004	ML6-11	15 minute 1 year Winter I+20%	46.255	46.004	-0.118	0.000	0.16	0.395	0.4	47.4	FLOOD RISK
ML6-3.000	ML6-12	15 minute 1 year Winter I+20%	48.460	48.272	-0.096	0.000	0.22	0.000	0.1	20.5	FLOOD RISK
ML6-3.001	ML6-13	15 minute 1 year Winter I+20%	48.313	48.109	-0.112	0.000	0.16	3.902	0.3	35.2	FLOOD RISK
ML6-3.002	ML6-14	15 minute 1 year Winter I+20%	47.525	47.317	-0.117	0.000	0.16	0.726	0.3	42.8	FLOOD RISK
ML6-3.003	ML6-15	15 minute 1 year Winter I+20%	46.857	46.659	-0.122	0.000	0.14	0.451	0.4	42.3	FLOOD RISK
ML6-3.004	ML6-16	15 minute 1 year Winter I+20%	46.220	46.012	-0.116	0.000	0.17	0.397	0.4	49.9	FLOOD RISK
ML6-4.000	ML6-17	15 minute 1 year Winter I+20%	47.059	45.591	-0.176	0.000	0.11	0.079	0.9	5.7	OK
ML6-4.001	ML6-18	15 minute 1 year Winter I+20%	46.417	44.970	-0.155	0.000	0.21	0.147	1.2	12.0	OK
ML6-5.000	ML6-19	15 minute 1 year Winter I+20%	50.709	50.518	-0.191	0.000	0.13	0.000	0.2	6.9	FLOOD RISK
ML6-5.001	ML6-20	15 minute 1 year Winter I+20%	50.203	50.035	-0.168	0.000	0.21	0.571	0.2	13.9	FLOOD RISK
ML6-5.002	ML6-21	15 minute 1 year Winter I+20%	48.856	45.723	-0.260	0.000	0.04	0.030	2.5	13.8	OK
ML6-6.000	ML6-22	15 minute 1 year Winter I+20%	49.159	48.896	-0.263	0.000	0.02	0.000	0.2	1.9	FLOOD RISK
ML6-6.001	ML6-23	15 minute 1 year Winter I+20%	48.772	46.508	-0.292	0.000	0.01	0.001	1.0	1.9	OK
ML6-6.002	ML6-24	15 minute 1 year Winter I+20%	44.600	43.460	-0.240	0.000	0.09	0.066	0.8	7.5	OK
ML6-3.005	ML6-25	15 minute 1 year Winter I+20%	44.775	43.442	-0.341	0.000	0.25	1.470	0.7	77.7	OK
ML6-7.000	ML6-26	15 minute 1 year Winter I+20%	44.585	43.411	-0.074	0.000	0.19	0.165	0.7	6.9	OK
ML6-1.006	ML6-27	15 minute 1 year Winter I+20%	44.772	43.407	-0.292	0.000	0.52	4.397	1.0	146.1	OK
ML6-1.007	ML6-28	15 minute 1 year Winter I+20%	44.631	43.354	-0.367	0.000	0.43	2.138	0.9	145.6	OK
ML6-8.000	ML6-29	15 minute 1 year Winter I+20%	53.013	52.751	-0.262	0.000	0.02	0.000	0.2	1.9	FLOOD RISK
ML6-8.001	ML6-30	15 minute 1 year Winter I+20%	51.819	51.556	-0.263	0.000	0.02	0.037	0.3	3.5	FLOOD RISK
ML6-8.002	ML6-31	15 minute 1 year Winter I+20%	50.370	47.884	-0.286	0.000	0.01	0.002	2.0	3.5	OK
ML6-1.008	ML6-FB	15 minute 1 year Winter I+20%	44.500	43.201	-0.399	0.000	0.24	15.072	1.9	155.2	OK
ML6-9.000	ML6-32	15 minute 1 year Winter I+20%	51.150	50.893	-0.257	0.000	0.03	0.000	0.4	5.4	FLOOD RISK
ML6-9.001	ML6-33	15 minute 1 year Winter I+20%	48.514	48.280	-0.234	0.000	0.06	0.015	0.4	10.4	FLOOD RISK
ML6-9.002	ML6-34	15 minute 1 year Winter I+20%	44.706	43.281	-0.238	0.000	0.09	0.063	1.0	10.5	OK
ML6-1.009	ML6-AB	1440 minute 1 year Winter I+20%	44.500	42.941	0.291	0.000	0.23	448.190	0.8	3.5	SURCHARGED

5 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML06

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	4	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s)	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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML6-1.000	ML6-01	15 minute 5 year Winter I+20%	48.974	48.911	-0.063	0.000	0.24	0.000	0.5	18.3	FLOOD RISK
ML6-1.001	ML6-02	15 minute 5 year Winter I+20%	48.532	47.183	-0.148	0.000	0.25	0.081	1.5	17.9	OK
ML6-1.002	ML6-03	15 minute 5 year Winter I+20%	48.001	45.935	-0.119	0.000	0.42	0.216	1.0	16.9	OK
ML6-1.003	ML6-04	15 minute 5 year Winter I+20%	47.254	45.537	-0.117	0.000	0.47	0.309	0.9	17.1	OK
ML6-1.004	ML6-05	15 minute 5 year Winter I+20%	46.911	45.441	-0.123	0.000	0.42	0.265	1.4	24.8	OK
ML6-1.005	ML6-06	15 minute 5 year Winter I+20%	46.342	44.593	-0.185	0.000	0.30	0.201	1.4	33.0	OK
ML6-2.000	ML6-07	15 minute 5 year Winter I+20%	49.127	48.848	-0.153	0.000	0.05	0.000	0.2	13.3	FLOOD RISK
ML6-2.001	ML6-08	15 minute 5 year Winter I+20%	48.424	48.228	-0.104	0.000	0.19	0.648	0.3	43.2	FLOOD RISK
ML6-2.002	ML6-09	15 minute 5 year Winter I+20%	47.516	47.324	-0.100	0.000	0.22	0.765	0.4	59.0	FLOOD RISK
ML6-2.003	ML6-10	15 minute 5 year Winter I+20%	46.830	46.634	-0.104	0.000	0.21	0.550	0.4	61.2	FLOOD RISK
ML6-2.004	ML6-11	15 minute 5 year Winter I+20%	46.255	46.028	-0.094	0.000	0.26	0.537	0.4	75.8	FLOOD RISK
ML6-3.000	ML6-12	15 minute 5 year Winter I+20%	48.460	48.302	-0.066	0.000	0.34	0.000	0.2	32.6	FLOOD RISK
ML6-3.001	ML6-13	15 minute 5 year Winter I+20%	48.313	48.132	-0.089	0.000	0.26	5.817	0.3	55.7	FLOOD RISK
ML6-3.002	ML6-14	15 minute 5 year Winter I+20%	47.525	47.341	-0.093	0.000	0.26	0.989	0.4	67.8	FLOOD RISK
ML6-3.003	ML6-15	15 minute 5 year Winter I+20%	46.857	46.681	-0.100	0.000	0.23	0.592	0.4	67.0	FLOOD RISK
ML6-3.004	ML6-16	15 minute 5 year Winter I+20%	46.220	46.037	-0.091	0.000	0.27	0.587	0.4	79.9	FLOOD RISK
ML6-4.000	ML6-17	15 minute 5 year Winter I+20%	47.059	45.605	-0.162	0.000	0.17	0.102	1.0	9.0	OK
ML6-4.001	ML6-18	15 minute 5 year Winter I+20%	46.417	44.990	-0.135	0.000	0.33	0.191	1.3	19.0	OK
ML6-5.000	ML6-19	15 minute 5 year Winter I+20%	50.709	50.551	-0.158	0.000	0.21	0.000	0.2	11.0	FLOOD RISK
ML6-5.001	ML6-20	15 minute 5 year Winter I+20%	50.203	50.074	-0.129	0.000	0.34	0.993	0.3	22.3	FLOOD RISK
ML6-5.002	ML6-21	15 minute 5 year Winter I+20%	48.856	45.735	-0.248	0.000	0.07	0.041	2.7	22.2	OK
ML6-6.000	ML6-22	15 minute 5 year Winter I+20%	49.159	48.908	-0.251	0.000	0.04	0.000	0.2	3.0	FLOOD RISK
ML6-6.001	ML6-23	15 minute 5 year Winter I+20%	48.772	46.512	-0.288	0.000	0.01	0.002	1.7	3.0	OK
ML6-6.002	ML6-24	15 minute 5 year Winter I+20%	44.600	43.556	-0.144	0.000	0.14	0.191	0.9	11.7	OK
ML6-3.005	ML6-25	15 minute 5 year Winter I+20%	44.775	43.549	-0.234	0.000	0.40	2.480	0.7	124.3	OK
ML6-7.000	ML6-26	15 minute 5 year Winter I+20%	44.585	43.527	0.042	0.000	0.30	0.296	0.8	10.5	SURCHARGED
ML6-1.006	ML6-27	15 minute 5 year Winter I+20%	44.772	43.519	-0.180	0.000	0.83	6.829	1.1	234.9	OK
ML6-1.007	ML6-28	15 minute 5 year Winter I+20%	44.631	43.459	-0.262	0.000	0.69	3.246	1.0	234.1	OK
ML6-8.000	ML6-29	15 minute 5 year Winter I+20%	53.013	52.763	-0.250	0.000	0.04	0.000	0.2	2.9	FLOOD RISK
ML6-8.001	ML6-30	15 minute 5 year Winter I+20%	51.819	51.568	-0.251	0.000	0.04	0.050	0.3	5.5	FLOOD RISK
ML6-8.002	ML6-31	15 minute 5 year Winter I+20%	50.370	47.892	-0.278	0.000	0.02	0.004	2.5	5.5	OK
ML6-1.008	ML6-FB	15 minute 5 year Winter I+20%	44.500	43.262	-0.338	0.000	0.39	20.710	2.1	250.2	OK
ML6-9.000	ML6-32	15 minute 5 year Winter I+20%	51.150	50.907	-0.243	0.000	0.05	0.000	0.4	8.5	FLOOD RISK
ML6-9.001	ML6-33	15 minute 5 year Winter I+20%	48.514	48.300	-0.214	0.000	0.10	0.020	0.5	16.6	FLOOD RISK
ML6-9.002	ML6-34	15 minute 5 year Winter I+20%	44.706	43.296	-0.223	0.000	0.15	0.081	1.2	16.7	OK
ML6-1.009	ML6-AB	960 minute 5 year Winter I+20%	44.500	43.159	0.509	0.000	0.23	698.978	0.8	3.5	SURCHARGED

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML06

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	4	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s)	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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML6-1.000	ML6-01	15 minute 30 year Winter I+40%	48.974	48.936	-0.038	0.000	0.46	0.000	0.6	35.7	FLOOD RISK
ML6-1.001	ML6-02	15 minute 30 year Winter I+40%	48.532	47.219	-0.112	0.000	0.49	0.121	1.8	35.0	OK
ML6-1.002	ML6-03	15 minute 30 year Winter I+40%	48.001	45.994	-0.060	0.000	0.83	0.399	1.1	33.0	OK
ML6-1.003	ML6-04	15 minute 30 year Winter I+40%	47.254	45.597	-0.057	0.000	0.91	0.670	1.0	33.3	OK
ML6-1.004	ML6-05	15 minute 30 year Winter I+40%	46.911	45.491	-0.073	0.000	0.79	0.476	1.6	46.6	OK
ML6-1.005	ML6-06	15 minute 30 year Winter I+40%	46.342	44.640	-0.138	0.000	0.55	0.314	1.6	60.1	OK
ML6-2.000	ML6-07	15 minute 30 year Winter I+40%	49.127	48.869	-0.132	0.000	0.11	0.000	0.3	25.9	FLOOD RISK
ML6-2.001	ML6-08	15 minute 30 year Winter I+40%	48.424	48.280	-0.052	0.000	0.41	2.039	0.4	94.5	FLOOD RISK
ML6-2.002	ML6-09	15 minute 30 year Winter I+40%	47.516	47.375	-0.049	0.000	0.48	2.387	0.4	127.1	FLOOD RISK
ML6-2.003	ML6-10	15 minute 30 year Winter I+40%	46.830	46.684	-0.054	0.000	0.45	1.657	0.5	130.0	FLOOD RISK
ML6-2.004	ML6-11	15 minute 30 year Winter I+40%	46.255	46.081	-0.041	0.000	0.56	1.707	0.5	164.0	FLOOD RISK
ML6-3.000	ML6-12	15 minute 30 year Winter I+40%	48.460	48.350	-0.018	0.000	0.67	0.000	0.2	63.5	FLOOD RISK
ML6-3.001	ML6-13	15 minute 30 year Winter I+40%	48.313	48.178	-0.043	0.000	0.49	14.646	0.4	106.5	FLOOD RISK
ML6-3.002	ML6-14	15 minute 30 year Winter I+40%	47.525	47.382	-0.052	0.000	0.47	2.638	0.4	124.5	FLOOD RISK
ML6-3.003	ML6-15	15 minute 30 year Winter I+40%	46.857	46.722	-0.059	0.000	0.42	1.570	0.5	123.2	FLOOD RISK
ML6-3.004	ML6-16	15 minute 30 year Winter I+40%	46.220	46.087	-0.041	0.000	0.57	1.657	0.5	166.2	FLOOD RISK
ML6-4.000	ML6-17	15 minute 30 year Winter I+40%	47.059	45.626	-0.141	0.000	0.30	0.139	1.2	15.6	OK
ML6-4.001	ML6-18	15 minute 30 year Winter I+40%	46.417	45.023	-0.102	0.000	0.56	0.291	1.5	32.5	OK
ML6-5.000	ML6-19	15 minute 30 year Winter I+40%	50.709	50.613	-0.096	0.000	0.41	0.000	0.2	21.4	FLOOD RISK
ML6-5.001	ML6-20	15 minute 30 year Winter I+40%	50.203	50.155	-0.048	0.000	0.70	2.371	0.3	46.2	FLOOD RISK
ML6-5.002	ML6-21	15 minute 30 year Winter I+40%	48.856	45.759	-0.224	0.000	0.15	0.062	3.3	45.9	OK
ML6-6.000	ML6-22	15 minute 30 year Winter I+40%	49.159	48.931	-0.228	0.000	0.07	0.000	0.2	5.8	FLOOD RISK
ML6-6.001	ML6-23	15 minute 30 year Winter I+40%	48.772	46.524	-0.276	0.000	0.02	0.005	2.4	5.9	OK
ML6-6.002	ML6-24	15 minute 30 year Winter I+40%	44.600	44.070	0.370	0.000	0.29	1.041	1.0	24.9	SURCHARGED
ML6-3.005	ML6-25	15 minute 30 year Winter I+40%	44.775	44.059	0.276	0.000	0.80	5.227	0.9	249.5	SURCHARGED
ML6-7.000	ML6-26	15 minute 30 year Winter I+40%	44.585	44.029	0.544	0.000	0.55	0.864	0.7	19.6	SURCHARGED
ML6-1.006	ML6-27	15 minute 30 year Winter I+40%	44.772	44.007	0.308	0.000	1.69	12.960	1.7	475.1	SURCHARGED
ML6-1.007	ML6-28	15 minute 30 year Winter I+40%	44.631	43.782	0.061	0.000	1.39	5.491	1.3	473.4	SURCHARGED
ML6-8.000	ML6-29	15 minute 30 year Winter I+40%	53.013	52.788	-0.225	0.000	0.07	0.000	0.2	5.7	FLOOD RISK
ML6-8.001	ML6-30	15 minute 30 year Winter I+40%	51.819	51.596	-0.223	0.000	0.07	0.083	0.4	11.0	FLOOD RISK
ML6-8.002	ML6-31	15 minute 30 year Winter I+40%	50.370	47.904	-0.266	0.000	0.03	0.007	2.5	11.0	OK
ML6-1.008	ML6-FB	1440 minute 30 year Winter I+40%	44.500	43.682	0.082	0.000	0.06	71.315	1.3	35.4	SURCHARGED
ML6-9.000	ML6-32	15 minute 30 year Winter I+40%	51.150	50.934	-0.216	0.000	0.09	0.000	0.5	16.6	FLOOD RISK
ML6-9.001	ML6-33	15 minute 30 year Winter I+40%	48.514	48.348	-0.166	0.000	0.21	0.050	0.6	36.2	FLOOD RISK
ML6-9.002	ML6-34	1440 minute 30 year Winter I+40%	44.706	43.681	0.162	0.000	0.01	0.510	0.8	1.6	SURCHARGED
ML6-1.009	ML6-AB	1440 minute 30 year Winter I+40%	44.500	43.681	1.031	0.000	0.23	1369.981	0.8	3.5	SURCHARGED

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for SWS-ML06

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	4	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status ON Inertia Status OFF
Analysis Timestep Fine DVD Status OFF

Profile(s)	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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
ML6-1.000	ML6-01	15 minute 100 year Winter I+45%	48.974	48.950	-0.024	0.000	0.62	0.000	0.6	48.1	FLOOD RISK
ML6-1.001	ML6-02	15 minute 100 year Winter I+45%	48.532	47.243	-0.088	0.000	0.66	0.147	1.9	47.3	OK
ML6-1.002	ML6-03	15 minute 100 year Winter I+45%	48.001	46.163	0.109	0.000	1.09	0.998	1.1	43.3	SURCHARGED
ML6-1.003	ML6-04	15 minute 100 year Winter I+45%	47.254	45.677	0.023	0.000	1.15	1.229	1.1	42.0	SURCHARGED
ML6-1.004	ML6-05	15 minute 100 year Winter I+45%	46.911	45.549	-0.015	0.000	0.97	0.722	1.7	57.4	OK
ML6-1.005	ML6-06	15 minute 100 year Winter I+45%	46.342	44.867	0.089	0.000	0.69	1.097	1.6	75.2	SURCHARGED
ML6-2.000	ML6-07	15 minute 100 year Winter I+45%	49.127	48.881	-0.120	0.000	0.14	0.000	0.3	35.0	FLOOD RISK
ML6-2.001	ML6-08	15 minute 100 year Winter I+45%	48.424	48.301	-0.031	0.000	0.55	2.681	0.4	127.4	FLOOD RISK
ML6-2.002	ML6-09	15 minute 100 year Winter I+45%	47.516	47.397	-0.027	0.000	0.65	3.145	0.5	172.4	FLOOD RISK
ML6-2.003	ML6-10	15 minute 100 year Winter I+45%	46.830	46.705	-0.033	0.000	0.62	2.221	0.5	178.6	FLOOD RISK
ML6-2.004	ML6-11	15 minute 100 year Winter I+45%	46.255	46.107	-0.015	0.000	0.79	2.275	0.5	228.5	FLOOD RISK
ML6-3.000	ML6-12	15 minute 100 year Winter I+45%	48.460	48.377	0.009	0.000	0.90	0.000	0.2	85.6	FLOOD RISK
ML6-3.001	ML6-13	15 minute 100 year Winter I+45%	48.313	48.203	-0.018	0.000	0.68	19.555	0.4	145.7	FLOOD RISK
ML6-3.002	ML6-14	15 minute 100 year Winter I+45%	47.525	47.405	-0.029	0.000	0.65	3.527	0.5	170.6	FLOOD RISK
ML6-3.003	ML6-15	15 minute 100 year Winter I+45%	46.857	46.743	-0.038	0.000	0.58	2.122	0.5	170.6	FLOOD RISK
ML6-3.004	ML6-16	15 minute 100 year Winter I+45%	46.220	46.112	-0.016	0.000	0.78	2.200	0.5	228.2	FLOOD RISK
ML6-4.000	ML6-17	15 minute 100 year Winter I+45%	47.059	45.635	-0.132	0.000	0.36	0.156	1.2	18.9	OK
ML6-4.001	ML6-18	15 minute 100 year Winter I+45%	46.417	45.115	-0.010	0.000	0.68	0.634	1.6	38.9	OK
ML6-5.000	ML6-19	15 minute 100 year Winter I+45%	50.709	50.647	-0.062	0.000	0.55	0.000	0.3	28.9	FLOOD RISK
ML6-5.001	ML6-20	15 minute 100 year Winter I+45%	50.203	50.197	-0.006	0.000	0.96	3.287	0.4	63.1	FLOOD RISK
ML6-5.002	ML6-21	15 minute 100 year Winter I+45%	48.856	45.774	-0.209	0.000	0.20	0.074	3.5	62.8	OK
ML6-6.000	ML6-22	15 minute 100 year Winter I+45%	49.159	48.945	-0.214	0.000	0.10	0.000	0.2	7.9	FLOOD RISK
ML6-6.001	ML6-23	15 minute 100 year Winter I+45%	48.772	46.531	-0.269	0.000	0.02	0.006	2.4	7.9	OK
ML6-6.002	ML6-24	15 minute 100 year Winter I+45%	44.600	44.428	0.728	0.000	0.37	1.649	1.0	31.9	FLOOD RISK
ML6-3.005	ML6-25	15 minute 100 year Winter I+45%	44.775	44.410	0.627	0.000	1.09	6.970	1.2	338.9	SURCHARGED
ML6-7.000	ML6-26	15 minute 100 year Winter I+45%	44.585	44.348	0.863	0.000	0.72	1.225	0.8	25.3	FLOOD RISK
ML6-1.006	ML6-27	15 minute 100 year Winter I+45%	44.772	44.308	0.609	0.000	2.29	15.106	2.3	643.6	SURCHARGED
ML6-1.007	ML6-28	1440 minute 100 year Winter I+45%	44.631	44.124	0.403	0.000	0.14	6.098	0.6	46.5	SURCHARGED
ML6-8.000	ML6-29	15 minute 100 year Winter I+45%	53.013	52.802	-0.211	0.000	0.09	0.000	0.2	7.7	FLOOD RISK
ML6-8.001	ML6-30	15 minute 100 year Winter I+45%	51.819	51.611	-0.208	0.000	0.10	0.100	0.4	14.6	FLOOD RISK
ML6-8.002	ML6-31	15 minute 100 year Winter I+45%	50.370	47.909	-0.261	0.000	0.04	0.009	2.7	14.6	OK
ML6-1.008	ML6-FB	1440 minute 100 year Winter I+45%	44.500	44.124	0.524	0.000	0.08	146.979	1.3	47.6	SURCHARGED
ML6-9.000	ML6-32	15 minute 100 year Winter I+45%	51.150	50.949	-0.201	0.000	0.12	0.000	0.6	22.4	FLOOD RISK
ML6-9.001	ML6-33	15 minute 100 year Winter I+45%	48.514	48.372	-0.142	0.000	0.29	0.070	0.7	48.9	FLOOD RISK
ML6-9.002	ML6-34	1440 minute 100 year Winter I+45%	44.706	44.123	0.604	0.000	0.02	1.004	0.8	2.3	SURCHARGED
ML6-1.009	ML6-AB	1440 minute 100 year Winter I+45%	44.500	44.124	1.474	0.000	0.26	2022.888	0.8	4.0	SURCHARGED

Catchment A47 STUB– Hydraulic Model Calculations

Contents

Summary of Results

1:1 surcharge check
All pipes pass for 1:1
1:5 no flooding check
All pipes pass for 1:5
1:10 no flooding check
All pipes pass for 1:30
1:30 no flooding check
Flooding stays within site extents 1:100 flooding check
Flooding stays within site extents

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes HCD Pipe Manhole Sizes HCD

FEH Rainfall Model

Return Period (years)	1	Maximum Time of Concentration (mins)	30
		Foul Sewage (l/s/ha)	0.000
FEH Rainfall Version	1999	Volumetric Runoff Coeff.	0.750
Site Location	GB 608626 312479 TG 08626 12479	PIMP (%)	100
C (1km)	0.000	Add Flow / Climate Change (%)	40
D1 (1km)	0.000	Minimum Backdrop Height (m)	0.200
D2 (1km)	0.000	Maximum Backdrop Height (m)	1.500
D3 (1km)	0.000	Min Design Depth for Optimisation (m)	1.200
E (1km)	0.000	Min Vel for Auto Design only (m/s)	0.75
F (1km)	0.000	Min Slope for Optimisation (1:X)	350
Maximum Rainfall (mm/hr)	50		

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.148	4-8	0.051

Total Area Contributing (ha) = 0.199

Total Pipe Volume (m³) = 7.441

Network Design Table 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	Auto Design
A47-1.000	30.336	0.133	228.1	0.007	5.00	0.0	1.500	o	150	Pipe/Conduit	
A47-2.000	26.255	0.100	262.6	0.005	5.00	0.0	1.500	o	150	Pipe/Conduit	
A47-1.001	22.510	0.530	42.5	0.096	0.00	0.0	0.600	o	225	Pipe/Conduit	
A47-3.000	27.240	0.342	79.7	0.007	5.00	0.0	1.500	o	150	Pipe/Conduit	
A47-3.001	18.718	0.185	101.2	0.005	0.00	0.0	1.500	o	150	Pipe/Conduit	
A47-3.002	19.650	0.178	110.4	0.080	0.00	0.0	0.600	o	225	Pipe/Conduit	
A47-1.002	55.922	0.559	100.0	0.000	0.00	0.0	1.500	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
A47-1.000	10.21	5.87	43.183	0.007	0.0	0.0	0.1	0.58	10.2	0.3
A47-2.000	10.32	5.81	43.150	0.005	0.0	0.0	0.1	0.54	9.5	0.2
A47-1.001	9.90	6.06	42.975	0.108	0.0	0.0	1.2	2.01	80.0	4.0
A47-3.000	10.98	5.46	43.225	0.007	0.0	0.0	0.1	0.98	17.4	0.3
A47-3.001	10.31	5.82	42.883	0.012	0.0	0.0	0.1	0.87	15.4	0.5
A47-3.002	9.86	6.08	42.623	0.091	0.0	0.0	1.0	1.24	49.5	3.4
A47-1.002	8.88	6.76	42.370	0.199	0.0	0.0	1.9	1.39	98.0	6.7

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)
A47-01NWL	44.533	1.350	Open Manhole	1050	A47-1.000	43.183	150				
A47-02NWL	44.500	1.350	Open Manhole	1050	A47-2.000	43.150	150				
A47-03NWL	44.400	1.425	Open Manhole	1050	A47-1.001	42.975	225	A47-1.000	43.050	150	
								A47-2.000	43.050	150	
A47-05NWL	44.575	1.350	Open Manhole	1050	A47-3.000	43.225	150				
A47-06NWL	44.233	1.350	Open Manhole	1050	A47-3.001	42.883	150	A47-3.000	42.883	150	
A47-07NWL	44.048	1.425	Open Manhole	1050	A47-3.002	42.623	225	A47-3.001	42.698	150	
A47-04NWL	44.500	2.130	Open Manhole	1200	A47-1.002	42.370	300	A47-1.001	42.445	225	
								A47-3.002	42.445	225	
A47-31	43.641	1.830	Open Manhole	1500		OUTFALL		A47-1.002	41.811	300	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
A47-01NWL	13773.441	523445.253	13773.441	523445.253	Required	
A47-02NWL	13732.898	523408.093	13732.898	523408.093	Required	
A47-03NWL	13755.709	523420.991	13755.709	523420.991	Required	
A47-05NWL	13796.763	523431.957	13796.763	523431.957	Required	
A47-06NWL	13782.280	523408.886	13782.280	523408.886	Required	
A47-07NWL	13778.578	523390.580	13778.578	523390.580	Required	
A47-04NWL	13760.860	523399.078	13760.860	523399.078	Required	
A47-31	13736.312	523348.831			No Entry	

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)
A47-1.000	o	150	A47-01NWL	44.533	43.183	1.200	Open Manhole	1050
A47-2.000	o	150	A47-02NWL	44.500	43.150	1.200	Open Manhole	1050
A47-1.001	o	225	A47-03NWL	44.400	42.975	1.200	Open Manhole	1050
A47-3.000	o	150	A47-05NWL	44.575	43.225	1.200	Open Manhole	1050
A47-3.001	o	150	A47-06NWL	44.233	42.883	1.200	Open Manhole	1050
A47-3.002	o	225	A47-07NWL	44.048	42.623	1.200	Open Manhole	1050
A47-1.002	o	300	A47-04NWL	44.500	42.370	1.830	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)
A47-1.000	30.336	228.1	A47-03NWL	44.400	43.050	1.200	Open Manhole	1050
A47-2.000	26.255	262.6	A47-03NWL	44.400	43.050	1.200	Open Manhole	1050
A47-1.001	22.510	42.5	A47-04NWL	44.500	42.445	1.830	Open Manhole	1200
A47-3.000	27.240	79.7	A47-06NWL	44.233	42.883	1.200	Open Manhole	1050
A47-3.001	18.718	101.2	A47-07NWL	44.048	42.698	1.200	Open Manhole	1050
A47-3.002	19.650	110.4	A47-04NWL	44.500	42.445	1.830	Open Manhole	1200
A47-1.002	55.922	100.0	A47-31	43.641	41.811	1.530	Open Manhole	1500

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)
A47-1.002	A47-31	43.641	41.811	0.000	1500	0

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	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	0	Number of Time/Area Diagrams	0
Number of Online Controls	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	D3 (1km)	0.270
FEH Rainfall Version	1999	E (1km)	0.313
Site Location	GB 610500 313350 TG 10500 13350	F (1km)	2.473
C (1km)	-0.024	Cv (Summer)	0.750
D1 (1km)	0.305	Cv (Winter)	0.840
D2 (1km)	0.305		

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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
Climate Change (%)	20

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.	Overflow (l/s)	Half Drain Time (mins)
A47-1.000	A47-01NWL	15 Winter	1	+20%					43.218	-0.115	0.000	0.12		
A47-2.000	A47-02NWL	15 Winter	1	+20%					43.179	-0.121	0.000	0.08		
A47-1.001	A47-03NWL	15 Winter	1	+20%					43.046	-0.154	0.000	0.21		
A47-3.000	A47-05NWL	15 Winter	1	+20%					43.251	-0.124	0.000	0.07		
A47-3.001	A47-06NWL	15 Winter	1	+20%					42.918	-0.115	0.000	0.12		
A47-3.002	A47-07NWL	15 Winter	1	+20%					42.706	-0.142	0.000	0.29		
A47-1.002	A47-04NWL	15 Winter	1	+20%					42.484	-0.186	0.000	0.30		

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
A47-1.000	A47-01NWL	1.2	OK	
A47-2.000	A47-02NWL	0.8	OK	
A47-1.001	A47-03NWL	15.5	OK	
A47-3.000	A47-05NWL	1.2	OK	
A47-3.001	A47-06NWL	1.8	OK	
A47-3.002	A47-07NWL	13.0	OK	
A47-1.002	A47-04NWL	28.2	OK	

5 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	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	0	Number of Time/Area Diagrams	0
Number of Online Controls	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 60, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A47-1.000	A47-01NWL	15 minute 5 year Winter I+20%	44.533	43.228	-0.105	0.000	0.19	0.035	0.4	1.9	OK
A47-2.000	A47-02NWL	15 minute 5 year Winter I+20%	44.500	43.187	-0.113	0.000	0.13	0.028	0.4	1.2	OK
A47-1.001	A47-03NWL	15 minute 5 year Winter I+20%	44.400	43.066	-0.134	0.000	0.34	0.082	1.7	24.8	OK
A47-3.000	A47-05NWL	15 minute 5 year Winter I+20%	44.575	43.258	-0.117	0.000	0.11	0.025	0.6	1.8	OK
A47-3.001	A47-06NWL	15 minute 5 year Winter I+20%	44.233	42.928	-0.105	0.000	0.20	0.052	0.6	2.9	OK
A47-3.002	A47-07NWL	15 minute 5 year Winter I+20%	44.048	42.732	-0.116	0.000	0.46	0.095	1.1	20.7	OK
A47-1.002	A47-04NWL	15 minute 5 year Winter I+20%	44.500	42.518	-0.152	0.000	0.48	0.240	1.3	44.9	OK

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	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	0	Number of Time/Area Diagrams	0
Number of Online Controls	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DTS Status	OFF
Analysis Timestep	Fine	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)	5, 30, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A47-1.000	A47-01NWL	15 minute 30 year Winter I+40%	44.533	43.247	-0.086	0.000	0.37	0.051	0.5	3.6	OK
A47-2.000	A47-02NWL	15 minute 30 year Winter I+40%	44.500	43.203	-0.097	0.000	0.26	0.041	0.4	2.4	OK
A47-1.001	A47-03NWL	15 minute 30 year Winter I+40%	44.400	43.130	-0.070	0.000	0.81	0.343	2.0	59.1	OK
A47-3.000	A47-05NWL	15 minute 30 year Winter I+40%	44.575	43.273	-0.102	0.000	0.21	0.037	0.8	3.6	OK
A47-3.001	A47-06NWL	15 minute 30 year Winter I+40%	44.233	42.982	-0.051	0.000	0.40	0.121	0.8	5.9	OK
A47-3.002	A47-07NWL	15 minute 30 year Winter I+40%	44.048	42.958	0.110	0.000	1.05	0.553	1.3	46.9	SURCHARGED
A47-1.002	A47-04NWL	15 minute 30 year Winter I+40%	44.500	42.754	0.084	0.000	1.07	1.383	1.5	100.1	SURCHARGED

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	0.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	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	0	Number of Time/Area Diagrams	0
Number of Online Controls	0	Number of Storage Structures	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	Data Type	Catchment
FEH Rainfall Version	2013	Cv (Summer)	0.750
Site Location	GB 610500 313350 TG 10500 13350	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm) 300.0 DTS Status OFF Inertia Status ON
Analysis Timestep Fine DVD 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)	5, 60, 100
Climate Change (%)	20, 40, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Maximum Velocity (m/s)	Pipe Flow (l/s)	Status
A47-1.000	A47-01NWL	15 minute 100 year Winter I+45%	44.533	43.591	0.258	0.000	0.61	0.349	0.5	6.0	SURCHARGED
A47-2.000	A47-02NWL	15 minute 100 year Winter I+45%	44.500	43.579	0.279	0.000	0.53	0.367	0.4	4.8	SURCHARGED
A47-1.001	A47-03NWL	15 minute 100 year Winter I+45%	44.400	43.575	0.375	0.000	0.93	1.478	2.1	68.3	SURCHARGED
A47-3.000	A47-05NWL	15 minute 100 year Winter I+45%	44.575	43.447	0.072	0.000	0.32	0.188	0.8	5.3	SURCHARGED
A47-3.001	A47-06NWL	15 minute 100 year Winter I+45%	44.233	43.415	0.382	0.000	0.85	0.919	0.8	12.5	SURCHARGED
A47-3.002	A47-07NWL	15 minute 100 year Winter I+45%	44.048	43.387	0.539	0.000	1.29	0.969	1.5	57.5	SURCHARGED
A47-1.002	A47-04NWL	15 minute 100 year Winter I+45%	44.500	43.076	0.406	0.000	1.31	2.325	1.8	123.0	SURCHARGED