



Premier Water Solutions 10 Ltd		Page 1
7 Mellingey Fields Cornwall TR3 7FA	Eng Tech MICE	
Date 05/02/2024 10:04 File 1166-SOAKAWAY CALC 1X3X...	Designed by Jessica Reed Checked by JR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+50%)

Half Drain Time : 43 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m <sup>3</sup> )	Status
15 min Summer	98.724	0.724	0.7	2.1	O K
30 min Summer	99.007	1.007	0.7	2.5	O K
60 min Summer	99.246	1.246	0.7	2.7	O K
120 min Summer	99.207	1.207	0.7	2.7	O K
180 min Summer	99.011	1.011	0.7	2.5	O K
240 min Summer	98.801	0.801	0.7	2.3	O K
360 min Summer	98.686	0.686	0.6	2.0	O K
480 min Summer	98.595	0.595	0.6	1.7	O K
600 min Summer	98.520	0.520	0.5	1.5	O K
720 min Summer	98.457	0.457	0.5	1.3	O K
960 min Summer	98.356	0.356	0.4	1.0	O K
1440 min Summer	98.221	0.221	0.4	0.6	O K
2160 min Summer	98.104	0.104	0.3	0.3	O K
2880 min Summer	98.050	0.050	0.3	0.1	O K
4320 min Summer	98.036	0.036	0.2	0.1	O K
5760 min Summer	98.029	0.029	0.1	0.1	O K
7200 min Summer	98.024	0.024	0.1	0.1	O K
8640 min Summer	98.021	0.021	0.1	0.1	O K
10080 min Summer	98.019	0.019	0.1	0.1	O K
15 min Winter	98.827	0.827	0.7	2.3	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Time-Peak (mins)
15 min Summer	132.650	0.0	16
30 min Summer	88.977	0.0	29
60 min Summer	56.987	0.0	46
120 min Summer	35.270	0.0	80
180 min Summer	26.261	0.0	114
240 min Summer	21.157	0.0	146
360 min Summer	15.528	0.0	212
480 min Summer	12.469	0.0	274
600 min Summer	10.509	0.0	336
720 min Summer	9.134	0.0	398
960 min Summer	7.314	0.0	520
1440 min Summer	5.337	0.0	764
2160 min Summer	3.887	0.0	1120
2880 min Summer	3.100	0.0	1456
4320 min Summer	2.249	0.0	2176
5760 min Summer	1.789	0.0	2928
7200 min Summer	1.497	0.0	3672
8640 min Summer	1.294	0.0	4264
10080 min Summer	1.145	0.0	5112
15 min Winter	132.650	0.0	16

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Summary of Results for 100 year Return Period (+50%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m <sup>3</sup> )	Status
30 min Winter	99.391	1.391	0.7	2.9	O K
60 min Winter	99.649	1.649	0.7	3.1	O K
120 min Winter	99.538	1.538	0.7	3.0	O K
180 min Winter	99.214	1.214	0.7	2.7	O K
240 min Winter	98.851	0.851	0.7	2.4	O K
360 min Winter	98.668	0.668	0.6	1.9	O K
480 min Winter	98.548	0.548	0.6	1.6	O K
600 min Winter	98.454	0.454	0.5	1.3	O K
720 min Winter	98.378	0.378	0.5	1.1	O K
960 min Winter	98.263	0.263	0.4	0.7	O K
1440 min Winter	98.120	0.120	0.3	0.3	O K
2160 min Winter	98.045	0.045	0.2	0.1	O K
2880 min Winter	98.036	0.036	0.2	0.1	O K
4320 min Winter	98.026	0.026	0.1	0.1	O K
5760 min Winter	98.021	0.021	0.1	0.1	O K
7200 min Winter	98.018	0.018	0.1	0.1	O K
8640 min Winter	98.015	0.015	0.1	0.0	O K
10080 min Winter	98.013	0.013	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Time-Peak (mins)
30 min Winter	88.977	0.0	30
60 min Winter	56.987	0.0	50
120 min Winter	35.270	0.0	88
180 min Winter	26.261	0.0	122
240 min Winter	21.157	0.0	156
360 min Winter	15.528	0.0	222
480 min Winter	12.469	0.0	286
600 min Winter	10.509	0.0	350
720 min Winter	9.134	0.0	412
960 min Winter	7.314	0.0	532
1440 min Winter	5.337	0.0	778
2160 min Winter	3.887	0.0	1084
2880 min Winter	3.100	0.0	1460
4320 min Winter	2.249	0.0	2144
5760 min Winter	1.789	0.0	2896
7200 min Winter	1.497	0.0	3640
8640 min Winter	1.294	0.0	4320
10080 min Winter	1.145	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.800	Shortest Storm (mins)	15
Ratio R	0.355	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+50

Time Area Diagram

Total Area (ha) 0.010

Time (mins)	Area
From:	To: (ha)
0	4 0.010

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Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 98.000 Safety Factor 2.0  
 Infiltration Coefficient Base (m/hr) 0.54000 Porosity 0.95  
 Infiltration Coefficient Side (m/hr) 0.54000

Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
0.000	3.0	3.0	0.900	0.0	9.4
0.800	3.0	9.4			

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Event: 60 min Winter

