

H2OK Systems Limited		Page 1
Nanjerrick Court Allet, Truro TR4 9DJ		
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Micro Drainage

Source Control 2017.1.2

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	2.822	0.622	0.0	171.3	0.0	171.3	5.8	0 K
30 min Summer	2.832	0.632	0.0	175.2	0.0	175.2	6.0	0 K
60 min Summer	2.766	0.566	0.0	147.3	0.0	147.3	4.8	0 K
120 min Summer	2.688	0.488	0.0	105.7	0.0	105.7	3.6	0 K
180 min Summer	2.652	0.452	0.0	79.8	0.0	79.8	3.1	0 K
240 min Summer	2.548	0.348	0.0	69.3	0.0	69.3	1.8	0 K
360 min Summer	2.476	0.276	0.0	52.8	0.0	52.8	1.2	0 K
480 min Summer	2.437	0.237	0.0	40.7	0.0	40.7	1.0	0 K
600 min Summer	2.413	0.213	0.0	36.6	0.0	36.6	0.7	0 K
720 min Summer	2.398	0.198	0.0	32.6	0.0	32.6	0.7	0 K
960 min Summer	2.374	0.174	0.0	24.9	0.0	24.9	0.6	0 K
1440 min Summer	2.344	0.144	0.0	17.9	0.0	17.9	0.4	0 K
2160 min Summer	2.323	0.123	0.0	13.4	0.0	13.4	0.4	0 K
2880 min Summer	2.316	0.116	0.0	12.0	0.0	12.0	0.3	0 K
4320 min Summer	2.302	0.102	0.0	9.5	0.0	9.5	0.2	0 K
5760 min Summer	2.283	0.083	0.0	6.4	0.0	6.4	0.3	0 K
7200 min Summer	2.277	0.077	0.0	5.5	0.0	5.5	0.3	0 K
8640 min Summer	2.272	0.072	0.0	5.4	0.0	5.4	0.2	0 K
10080 min Summer	2.266	0.066	0.0	4.6	0.0	4.6	0.2	0 K
15 min Winter	2.869	0.669	0.0	189.3	0.0	189.3	6.7	0 K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
15 min Summer	124.633	0.0	101.0	0.0	12
30 min Summer	83.789	0.0	135.7	0.0	20
60 min Summer	53.779	0.0	174.2	0.0	34
120 min Summer	33.337	0.0	216.0	0.0	62
180 min Summer	24.832	0.0	241.4	0.0	96
240 min Summer	20.006	0.0	259.3	0.0	124
360 min Summer	14.706	0.0	285.9	0.0	188
480 min Summer	11.818	0.0	306.3	0.0	246
600 min Summer	9.966	0.0	322.9	0.0	296
720 min Summer	8.665	0.0	336.9	0.0	368
960 min Summer	6.943	0.0	360.0	0.0	484
1440 min Summer	5.071	0.0	394.4	0.0	740
2160 min Summer	3.696	0.0	429.7	0.0	1068
2880 min Summer	2.949	0.0	457.5	0.0	1392
4320 min Summer	2.142	0.0	496.6	0.0	2196
5760 min Summer	1.705	0.0	526.9	0.0	2912
7200 min Summer	1.427	0.0	552.5	0.0	3496
8640 min Summer	1.235	0.0	567.3	0.0	4232
10080 min Summer	1.093	0.0	580.9	0.0	5168
15 min Winter	124.633	0.0	113.1	0.0	12

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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)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.432

Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)
0 4	0.221	4 8	0.211

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Model Details

Storage is Online Cover Level (m) 3.000

Infiltration Trench Structure

Infiltration Coefficient Base (m/hr) 0.00100	Trench Width (m) 0.5
Infiltration Coefficient Side (m/hr) 0.00100	Trench Length (m) 522.0
Safety Factor 2.0	Slope (1:X) 200.0
Porosity 0.30	Cap Volume Depth (m) 0.000
Invert Level (m) 2.200	Cap Infiltration Depth (m) 0.000

Pipe Outflow Control

Diameter (m) 0.450	Entry Loss Coefficient 0.500
Slope (1:X) 1000.0	Coefficient of Contraction 0.600
Length (m) 45.000	Upstream Invert Level (m) 2.200
Roughness k (mm) 0.600	

Weir Overflow Control

Discharge Coef 0.544 Width (m) 10.000 Invert Level (m) 3.000

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Event: 15 min Winter