

H2OK Systems Limited		Page 1
Nanjerrick Court Allet, Truro TR4 9DJ		
Date 19/06/2018 14:00 File Trench 2.srcx	Designed by HShort Checked by	

Micro Drainage Source Control 2017.1.2

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

Half Drain Time : 2 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	2.727	0.527	0.0	60.5	0.0	60.5	10.6	0 K
30 min Summer	2.739	0.539	0.0	61.7	0.0	61.7	10.9	0 K
60 min Summer	2.663	0.463	0.0	53.9	0.0	53.9	9.2	0 K
120 min Summer	2.556	0.356	0.0	40.6	0.0	40.7	6.8	0 K
180 min Summer	2.504	0.304	0.0	32.3	0.0	32.3	5.6	0 K
240 min Summer	2.477	0.277	0.0	26.8	0.0	26.8	5.0	0 K
360 min Summer	2.451	0.251	0.0	20.3	0.0	20.3	4.4	0 K
480 min Summer	2.439	0.239	0.0	16.5	0.0	16.5	4.2	0 K
600 min Summer	2.432	0.232	0.0	14.0	0.0	14.0	4.0	0 K
720 min Summer	2.429	0.229	0.0	12.5	0.0	12.5	3.9	0 K
960 min Summer	2.381	0.181	0.0	9.7	0.0	9.7	2.9	0 K
1440 min Summer	2.339	0.139	0.0	7.1	0.0	7.2	1.9	0 K
2160 min Summer	2.311	0.111	0.0	5.3	0.0	5.3	1.3	0 K
2880 min Summer	2.297	0.097	0.0	4.2	0.0	4.2	1.0	0 K
4320 min Summer	2.280	0.080	0.0	3.2	0.0	3.2	0.7	0 K
5760 min Summer	2.269	0.069	0.0	2.5	0.0	2.5	0.5	0 K
7200 min Summer	2.264	0.064	0.0	2.1	0.0	2.1	0.4	0 K
8640 min Summer	2.257	0.057	0.0	1.7	0.0	1.7	0.3	0 K
10080 min Summer	2.255	0.055	0.0	1.7	0.0	1.7	0.3	0 K
15 min Winter	2.778	0.578	0.0	65.2	0.0	65.3	11.8	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	40.2	0.0	14
30 min Summer	83.789	0.0	54.0	0.0	22
60 min Summer	53.779	0.0	69.4	0.0	36
120 min Summer	33.337	0.0	86.0	0.0	66
180 min Summer	24.832	0.0	96.1	0.0	96
240 min Summer	20.006	0.0	103.2	0.0	126
360 min Summer	14.706	0.0	113.8	0.0	186
480 min Summer	11.818	0.0	122.0	0.0	246
600 min Summer	9.966	0.0	128.6	0.0	304
720 min Summer	8.665	0.0	134.1	0.0	366
960 min Summer	6.943	0.0	143.3	0.0	490
1440 min Summer	5.071	0.0	157.0	0.0	724
2160 min Summer	3.696	0.0	171.6	0.0	1080
2880 min Summer	2.949	0.0	182.6	0.0	1448
4320 min Summer	2.142	0.0	198.9	0.0	2160
5760 min Summer	1.705	0.0	211.1	0.0	2808
7200 min Summer	1.427	0.0	220.9	0.0	3536
8640 min Summer	1.235	0.0	229.4	0.0	4400
10080 min Summer	1.093	0.0	237.0	0.0	5072
15 min Winter	124.633	0.0	45.0	0.0	14

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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) 0.172

Time (mins)	Area	Time (mins)	Area
From: To: (ha)		From: To: (ha)	
0 4 0.080		4 8 0.092	

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<u>Model Details</u> Storage is Online Cover Level (m) 3.000 <u>Infiltration Trench Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00100</td> <td>Trench Width (m)</td> <td>0.5</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>0.00100</td> <td>Trench Length (m)</td> <td>150.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Slope (1:X)</td> <td>1400.0</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.000</td> </tr> <tr> <td>Invert Level (m)</td> <td>2.200</td> <td>Cap Infiltration Depth (m)</td> <td>0.000</td> </tr> </table> <u>Pipe Outflow Control</u> <table> <tr> <td>Diameter (m)</td> <td>0.225</td> <td>Entry Loss Coefficient</td> <td>0.500</td> </tr> <tr> <td>Slope (1:X)</td> <td>1000.0</td> <td>Coefficient of Contraction</td> <td>0.600</td> </tr> <tr> <td>Length (m)</td> <td>10.000</td> <td>Upstream Invert Level (m)</td> <td>2.200</td> </tr> <tr> <td>Roughness k (mm)</td> <td>0.600</td> <td></td> <td></td> </tr> </table> <u>Weir Overflow Control</u> Discharge Coef 0.544 Width (m) 10.000 Invert Level (m) 3.000			Infiltration Coefficient Base (m/hr)	0.00100	Trench Width (m)	0.5	Infiltration Coefficient Side (m/hr)	0.00100	Trench Length (m)	150.0	Safety Factor	2.0	Slope (1:X)	1400.0	Porosity	0.30	Cap Volume Depth (m)	0.000	Invert Level (m)	2.200	Cap Infiltration Depth (m)	0.000	Diameter (m)	0.225	Entry Loss Coefficient	0.500	Slope (1:X)	1000.0	Coefficient of Contraction	0.600	Length (m)	10.000	Upstream Invert Level (m)	2.200	Roughness k (mm)	0.600		
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Event: 15 min Winter