

T J Booth Associates		Page 1
104 Yorkshire St Rochdale Lancashire OL16 1JY		
Date 23 July 2026 11:26 File CALC-T~1.SRC	Designed By Pc3 Checked By	
Micro Drainage		Source Control W.10.4

Summary of Results for 100 year Return Period (+45%)

Storm Duration (mins)	Maximum Control (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	3.2	3.2	166.2337	0.1637	3.3	O K
30 Summer	3.9	3.9	166.3177	0.2477	5.0	O K
60 Summer	4.2	4.2	166.3563	0.2862	5.7	O K
120 Summer	4.4	4.4	166.3893	0.3192	6.4	O K
180 Summer	4.2	4.2	166.3643	0.2942	5.9	O K
240 Summer	4.4	4.4	166.3963	0.3262	6.5	O K
360 Summer	4.0	4.0	166.3348	0.2647	5.3	O K
480 Summer	3.7	3.7	166.2863	0.2162	4.3	O K
600 Summer	3.3	3.3	166.2483	0.1782	3.6	O K
720 Summer	3.1	3.1	166.2188	0.1487	3.0	O K
960 Summer	2.7	2.7	166.1763	0.1063	2.1	O K
1440 Summer	2.1	2.1	166.1293	0.0593	1.2	O K
2160 Summer	1.6	1.6	166.1008	0.0307	0.6	O K
2880 Summer	1.3	1.3	166.0903	0.0202	0.4	O K
4320 Summer	1.0	1.0	166.0778	0.0078	0.2	O K
5760 Summer	0.8	0.8	166.0713	0.0013	0.0	O K
7200 Summer	0.7	0.7	166.0700	0.0000	0.0	O K
8640 Summer	0.6	0.6	166.0700	0.0000	0.0	O K
10080 Summer	0.5	0.5	166.0700	0.0000	0.0	O K
15 Winter	3.5	3.5	166.2698	0.1997	4.0	O K
30 Winter	4.5	4.5	166.4113	0.3412	6.8	O K
60 Winter	4.8	4.8	166.4642	0.3942	7.9	O K
120 Winter	4.8	4.8	166.4568	0.3867	7.7	O K
180 Winter	4.7	4.7	166.4443	0.3742	7.5	O K
240 Winter	4.4	4.4	166.3883	0.3182	6.4	O K
360 Winter	3.8	3.8	166.3003	0.2302	4.6	O K
480 Winter	3.3	3.3	166.2402	0.1702	3.4	O K
600 Winter	2.9	2.9	166.1988	0.1288	2.6	O K
720 Winter	2.6	2.6	166.1693	0.0993	2.0	O K
960 Winter	2.2	2.2	166.1323	0.0623	1.2	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	89.23	16
30 Summer	61.54	26
60 Summer	40.51	44
120 Summer	25.63	78
180 Summer	19.23	110
240 Summer	15.63	152
360 Summer	11.65	214
480 Summer	9.44	274
600 Summer	8.01	334
720 Summer	7.00	394
960 Summer	5.65	512
1440 Summer	4.17	750
2160 Summer	3.07	1104
2880 Summer	2.46	1468
4320 Summer	1.81	2184
5760 Summer	1.45	2920
7200 Summer	1.23	0
8640 Summer	1.07	0
10080 Summer	0.95	0
15 Winter	89.23	16
30 Winter	61.54	27
60 Winter	40.51	46
120 Winter	25.63	82
180 Winter	19.23	126
240 Winter	15.63	158
360 Winter	11.65	220
480 Winter	9.44	278
600 Winter	8.01	338
720 Winter	7.00	396
960 Winter	5.65	510

Summary of Results for 100 year Return Period (+45%)

Storm Duration (mins)	Maximum Control (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
1440 Winter	1.6	1.6	166.1008	0.0307	0.6	O K
2160 Winter	1.2	1.2	166.0858	0.0158	0.3	O K
2880 Winter	1.0	1.0	166.0773	0.0073	0.1	O K
4320 Winter	0.7	0.7	166.0700	0.0000	0.0	O K
5760 Winter	0.6	0.6	166.0700	0.0000	0.0	O K
7200 Winter	0.5	0.5	166.0700	0.0000	0.0	O K
8640 Winter	0.4	0.4	166.0700	0.0000	0.0	O K
10080 Winter	0.4	0.4	166.0700	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
1440 Winter	4.17	740
2160 Winter	3.07	1104
2880 Winter	2.46	1440
4320 Winter	1.81	0
5760 Winter	1.45	0
7200 Winter	1.23	0
8640 Winter	1.07	0
10080 Winter	0.95	0

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+45
Ratio-R	0.300	Longest Storm (mins)	10080		

Pipe Network

Volume in Pipe Network (m³)	6	Dia of Outfall Pipe (m)	0.100
Slope of Outfall Pipe (1:x)	100.0	Roughness of Outfall Pipe	0.600

Time / Area Diagram

Total Area (ha) = 0.046

Time	(mins)	Area
from:	to:	(ha)
0	4	0.046

Tank/Pond Details

Invert Level (m) 166.070 Ground Level (m) 167.300

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.00	20.0	0.40	20.0	0.80	20.0	1.20	20.0	1.60	20.0	2.00	20.0	2.40	20.0
0.10	20.0	0.50	20.0	0.90	20.0	1.30	20.0	1.70	20.0	2.10	20.0	2.50	20.0
0.20	20.0	0.60	20.0	1.00	20.0	1.40	20.0	1.80	20.0	2.20	20.0		
0.30	20.0	0.70	20.0	1.10	20.0	1.50	20.0	1.90	20.0	2.30	20.0		

Orifice Outflow Control

Diameter (m) 0.060 Discharge Coefficient 0.600 Invert Level (m) 166.020