

Vale Consultancy				Page 1																																																																																																																																																																																																																			
29 Bocam Park Old Field Road, Pencoed Bridgend, Glamorgan, CF35 5LJ		TREDERWEN, BRONDEG, MERTHYR TYDFIL																																																																																																																																																																																																																					
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Summary of Results for 100 year Return Period (+30%) Half Drain Time : 285 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>46.606</td><td>0.406</td><td>0.3</td><td>4.6</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>46.787</td><td>0.587</td><td>0.3</td><td>6.7</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>46.993</td><td>0.793</td><td>0.4</td><td>9.0</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>47.140</td><td>0.940</td><td>0.4</td><td>10.7</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>47.217</td><td>1.017</td><td>0.4</td><td>11.6</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>47.261</td><td>1.061</td><td>0.4</td><td>12.1</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>47.314</td><td>1.114</td><td>0.4</td><td>12.7</td><td>0 K</td></tr><tr><td>480 min Summer</td><td>47.338</td><td>1.138</td><td>0.4</td><td>13.0</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>47.345</td><td>1.145</td><td>0.5</td><td>13.1</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>47.342</td><td>1.142</td><td>0.5</td><td>13.0</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>47.320</td><td>1.120</td><td>0.4</td><td>12.8</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>47.260</td><td>1.060</td><td>0.4</td><td>12.1</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>47.166</td><td>0.966</td><td>0.4</td><td>11.0</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>47.082</td><td>0.882</td><td>0.4</td><td>10.1</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>46.951</td><td>0.751</td><td>0.4</td><td>8.6</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>46.853</td><td>0.653</td><td>0.3</td><td>7.4</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>46.782</td><td>0.582</td><td>0.3</td><td>6.6</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>46.728</td><td>0.528</td><td>0.3</td><td>6.0</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>46.685</td><td>0.485</td><td>0.3</td><td>5.5</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>46.606</td><td>0.406</td><td>0.3</td><td>4.6</td><td>0 K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>103.740</td><td>0.0</td><td>25</td></tr><tr><td>30 min Summer</td><td>76.034</td><td>0.0</td><td>39</td></tr><tr><td>60 min Summer</td><td>53.146</td><td>0.0</td><td>68</td></tr><tr><td>120 min Summer</td><td>33.827</td><td>0.0</td><td>124</td></tr><tr><td>180 min Summer</td><td>26.096</td><td>0.0</td><td>182</td></tr><tr><td>240 min Summer</td><td>21.723</td><td>0.0</td><td>218</td></tr><tr><td>360 min Summer</td><td>16.736</td><td>0.0</td><td>282</td></tr><tr><td>480 min Summer</td><td>13.856</td><td>0.0</td><td>348</td></tr><tr><td>600 min Summer</td><td>11.939</td><td>0.0</td><td>418</td></tr><tr><td>720 min Summer</td><td>10.555</td><td>0.0</td><td>488</td></tr><tr><td>960 min Summer</td><td>8.661</td><td>0.0</td><td>626</td></tr><tr><td>1440 min Summer</td><td>6.527</td><td>0.0</td><td>902</td></tr><tr><td>2160 min Summer</td><td>4.920</td><td>0.0</td><td>1304</td></tr><tr><td>2880 min Summer</td><td>4.045</td><td>0.0</td><td>1704</td></tr><tr><td>4320 min Summer</td><td>3.108</td><td>0.0</td><td>2468</td></tr><tr><td>5760 min Summer</td><td>2.610</td><td>0.0</td><td>3224</td></tr><tr><td>7200 min Summer</td><td>2.307</td><td>0.0</td><td>3960</td></tr><tr><td>8640 min Summer</td><td>2.101</td><td>0.0</td><td>4672</td></tr><tr><td>10080 min Summer</td><td>1.953</td><td>0.0</td><td>5448</td></tr><tr><td>15 min Winter</td><td>103.740</td><td>0.0</td><td>25</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	46.606	0.406	0.3	4.6	0 K	30 min Summer	46.787	0.587	0.3	6.7	0 K	60 min Summer	46.993	0.793	0.4	9.0	0 K	120 min Summer	47.140	0.940	0.4	10.7	0 K	180 min Summer	47.217	1.017	0.4	11.6	0 K	240 min Summer	47.261	1.061	0.4	12.1	0 K	360 min Summer	47.314	1.114	0.4	12.7	0 K	480 min Summer	47.338	1.138	0.4	13.0	0 K	600 min Summer	47.345	1.145	0.5	13.1	0 K	720 min Summer	47.342	1.142	0.5	13.0	0 K	960 min Summer	47.320	1.120	0.4	12.8	0 K	1440 min Summer	47.260	1.060	0.4	12.1	0 K	2160 min Summer	47.166	0.966	0.4	11.0	0 K	2880 min Summer	47.082	0.882	0.4	10.1	0 K	4320 min Summer	46.951	0.751	0.4	8.6	0 K	5760 min Summer	46.853	0.653	0.3	7.4	0 K	7200 min Summer	46.782	0.582	0.3	6.6	0 K	8640 min Summer	46.728	0.528	0.3	6.0	0 K	10080 min Summer	46.685	0.485	0.3	5.5	0 K	15 min Winter	46.606	0.406	0.3	4.6	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	103.740	0.0	25	30 min Summer	76.034	0.0	39	60 min Summer	53.146	0.0	68	120 min Summer	33.827	0.0	124	180 min Summer	26.096	0.0	182	240 min 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Innovyze			Source Control 2020.1			
<u>Summary of Results for 100 year Return Period (+30%)</u>						
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	
30 min Winter	46.788	0.588	0.3	6.7	0 K	
60 min Winter	46.995	0.795	0.4	9.1	0 K	
120 min Winter	47.146	0.946	0.4	10.8	0 K	
180 min Winter	47.226	1.026	0.4	11.7	0 K	
240 min Winter	47.272	1.072	0.4	12.2	0 K	
360 min Winter	47.317	1.117	0.4	12.7	0 K	
480 min Winter	47.336	1.136	0.4	12.9	0 K	
600 min Winter	47.334	1.134	0.4	12.9	0 K	
720 min Winter	47.321	1.121	0.4	12.8	0 K	
960 min Winter	47.278	1.078	0.4	12.3	0 K	
1440 min Winter	47.177	0.977	0.4	11.1	0 K	
2160 min Winter	47.033	0.833	0.4	9.5	0 K	
2880 min Winter	46.913	0.713	0.4	8.1	0 K	
4320 min Winter	46.733	0.533	0.3	6.1	0 K	
5760 min Winter	46.606	0.406	0.3	4.6	0 K	
7200 min Winter	46.516	0.316	0.3	3.6	0 K	
8640 min Winter	46.449	0.249	0.3	2.8	0 K	
10080 min Winter	46.397	0.197	0.2	2.2	0 K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
30 min Winter	76.034	0.0	39			
60 min Winter	53.146	0.0	66			
120 min Winter	33.827	0.0	122			
180 min Winter	26.096	0.0	178			
240 min Winter	21.723	0.0	230			
360 min Winter	16.736	0.0	290			
480 min Winter	13.856	0.0	368			
600 min Winter	11.939	0.0	446			
720 min Winter	10.555	0.0	522			
960 min Winter	8.661	0.0	674			
1440 min Winter	6.527	0.0	964			
2160 min Winter	4.920	0.0	1384			
2880 min Winter	4.045	0.0	1788			
4320 min Winter	3.108	0.0	2556			
5760 min Winter	2.610	0.0	3304			
7200 min Winter	2.307	0.0	4040			
8640 min Winter	2.101	0.0	4760			
10080 min Winter	1.953	0.0	5544			
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Model Details Storage is Online Cover Level (m) 48.000 Cellular Storage Structure Invert Level (m) 46.200 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.11664 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.11664 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>12.0</td><td>12.0</td><td>1.201</td><td>0.0</td><td>28.6</td></tr><tr><td>1.200</td><td>12.0</td><td>28.6</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	12.0	12.0	1.201	0.0	28.6	1.200	12.0	28.6			
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