

Black Seal Ltd				Page 1																																																																																																																																																																																																																			
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 182 minutes. <table><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><tr><td>15 min Summer</td><td>81.191</td><td>0.291</td><td>3.7</td><td>37.2</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>81.286</td><td>0.386</td><td>3.8</td><td>49.3</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>81.374</td><td>0.474</td><td>3.9</td><td>60.5</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>81.432</td><td>0.532</td><td>4.0</td><td>67.9</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>81.440</td><td>0.540</td><td>4.0</td><td>68.9</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>81.435</td><td>0.535</td><td>4.0</td><td>68.3</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>81.415</td><td>0.515</td><td>4.0</td><td>65.7</td><td>0 K</td></tr><tr><td>480 min Summer</td><td>81.392</td><td>0.492</td><td>3.9</td><td>62.8</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>81.368</td><td>0.468</td><td>3.9</td><td>59.8</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>81.344</td><td>0.444</td><td>3.9</td><td>56.6</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>81.295</td><td>0.395</td><td>3.8</td><td>50.4</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>81.205</td><td>0.305</td><td>3.7</td><td>38.9</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>81.095</td><td>0.195</td><td>3.6</td><td>24.9</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>81.018</td><td>0.118</td><td>3.5</td><td>15.1</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>80.950</td><td>0.050</td><td>3.4</td><td>6.3</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>80.940</td><td>0.040</td><td>2.7</td><td>5.1</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>80.934</td><td>0.034</td><td>2.3</td><td>4.3</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>80.929</td><td>0.029</td><td>2.0</td><td>3.7</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>80.926</td><td>0.026</td><td>1.8</td><td>3.3</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>81.229</td><td>0.329</td><td>3.7</td><td>42.0</td><td>0 K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>114.068</td><td>0.0</td><td>21</td></tr><tr><td>30 min Summer</td><td>77.827</td><td>0.0</td><td>35</td></tr><tr><td>60 min Summer</td><td>50.812</td><td>0.0</td><td>64</td></tr><tr><td>120 min Summer</td><td>32.076</td><td>0.0</td><td>120</td></tr><tr><td>180 min Summer</td><td>24.146</td><td>0.0</td><td>154</td></tr><tr><td>240 min Summer</td><td>19.594</td><td>0.0</td><td>186</td></tr><tr><td>360 min Summer</td><td>14.506</td><td>0.0</td><td>254</td></tr><tr><td>480 min Summer</td><td>11.720</td><td>0.0</td><td>322</td></tr><tr><td>600 min 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Summer	81.286	0.386	3.8	49.3	0 K	60 min Summer	81.374	0.474	3.9	60.5	0 K	120 min Summer	81.432	0.532	4.0	67.9	0 K	180 min Summer	81.440	0.540	4.0	68.9	0 K	240 min Summer	81.435	0.535	4.0	68.3	0 K	360 min Summer	81.415	0.515	4.0	65.7	0 K	480 min Summer	81.392	0.492	3.9	62.8	0 K	600 min Summer	81.368	0.468	3.9	59.8	0 K	720 min Summer	81.344	0.444	3.9	56.6	0 K	960 min Summer	81.295	0.395	3.8	50.4	0 K	1440 min Summer	81.205	0.305	3.7	38.9	0 K	2160 min Summer	81.095	0.195	3.6	24.9	0 K	2880 min Summer	81.018	0.118	3.5	15.1	0 K	4320 min Summer	80.950	0.050	3.4	6.3	0 K	5760 min Summer	80.940	0.040	2.7	5.1	0 K	7200 min Summer	80.934	0.034	2.3	4.3	0 K	8640 min Summer	80.929	0.029	2.0	3.7	0 K	10080 min Summer	80.926	0.026	1.8	3.3	0 K	15 min Winter	81.229	0.329	3.7	42.0	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	114.068	0.0	21	30 min Summer	77.827	0.0	35	60 min Summer	50.812	0.0	64	120 min Summer	32.076	0.0	120	180 min Summer	24.146	0.0	154	240 min Summer	19.594	0.0	186	360 min Summer	14.506	0.0	254	480 min Summer	11.720	0.0	322	600 min Summer	9.925	0.0	390	720 min Summer	8.658	0.0	460	960 min Summer	6.974	0.0	592	1440 min Summer	5.129	0.0	852	2160 min Summer	3.764	0.0	1212	2880 min Summer	3.017	0.0	1556	4320 min Summer	2.204	0.0	2204	5760 min Summer	1.762	0.0	2936	7200 min Summer	1.481	0.0	3640	8640 min Summer	1.286	0.0	4392	10080 min Summer	1.142	0.0	5080	15 min Winter	114.068	0.0	21
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Date 01/04/2017 File Soakaway 17-04-17.srcx		Designed by W Wright Checked by			
XP Solutions		Source Control 2017.1			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	81.338	0.438	3.9	55.9	0 K
60 min Winter	81.441	0.541	4.0	69.1	0 K
120 min Winter	81.517	0.617	4.1	78.8	0 K
180 min Winter	81.530	0.630	4.1	80.5	0 K
240 min Winter	81.522	0.622	4.1	79.4	0 K
360 min Winter	81.494	0.594	4.0	75.8	0 K
480 min Winter	81.459	0.559	4.0	71.4	0 K
600 min Winter	81.421	0.521	4.0	66.5	0 K
720 min Winter	81.382	0.482	3.9	61.6	0 K
960 min Winter	81.306	0.406	3.8	51.9	0 K
1440 min Winter	81.170	0.270	3.7	34.5	0 K
2160 min Winter	81.019	0.119	3.5	15.1	0 K
2880 min Winter	80.949	0.049	3.4	6.3	0 K
4320 min Winter	80.936	0.036	2.5	4.6	0 K
5760 min Winter	80.929	0.029	2.0	3.7	0 K
7200 min Winter	80.924	0.024	1.7	3.1	0 K
8640 min Winter	80.921	0.021	1.5	2.7	0 K
10080 min Winter	80.919	0.019	1.3	2.4	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	77.827	0.0	35		
60 min Winter	50.812	0.0	62		
120 min Winter	32.076	0.0	118		
180 min Winter	24.146	0.0	172		
240 min Winter	19.594	0.0	198		
360 min Winter	14.506	0.0	274		
480 min Winter	11.720	0.0	350		
600 min Winter	9.925	0.0	426		
720 min Winter	8.658	0.0	498		
960 min Winter	6.974	0.0	638		
1440 min Winter	5.129	0.0	898		
2160 min Winter	3.764	0.0	1236		
2880 min Winter	3.017	0.0	1472		
4320 min Winter	2.204	0.0	2200		
5760 min Winter	1.762	0.0	2936		
7200 min Winter	1.481	0.0	3672		
8640 min Winter	1.286	0.0	4368		
10080 min Winter	1.142	0.0	5048		
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<u>Model Details</u> Storage is Online Cover Level (m) 82.650 <u>Cellular Storage Structure</u> Invert Level (m) 80.900 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.18000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.18000 <table border="1"> <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>134.4</td><td>134.4</td><td>1.300</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.100</td><td>134.4</td><td>139.0</td><td>1.400</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.200</td><td>134.4</td><td>143.7</td><td>1.500</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.300</td><td>134.4</td><td>148.3</td><td>1.600</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.400</td><td>134.4</td><td>152.9</td><td>1.700</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.500</td><td>134.4</td><td>157.6</td><td>1.800</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.600</td><td>134.4</td><td>162.2</td><td>1.900</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.700</td><td>134.4</td><td>166.9</td><td>2.000</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.800</td><td>0.0</td><td>169.2</td><td>2.100</td><td>0.0</td><td>169.2</td></tr> <tr><td>0.900</td><td>0.0</td><td>169.2</td><td>2.200</td><td>0.0</td><td>169.2</td></tr> <tr><td>1.000</td><td>0.0</td><td>169.2</td><td>2.300</td><td>0.0</td><td>169.2</td></tr> <tr><td>1.100</td><td>0.0</td><td>169.2</td><td>2.400</td><td>0.0</td><td>169.2</td></tr> <tr><td>1.200</td><td>0.0</td><td>169.2</td><td>2.500</td><td>0.0</td><td>169.2</td></tr> </tbody> </table>			Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	0.000	134.4	134.4	1.300	0.0	169.2	0.100	134.4	139.0	1.400	0.0	169.2	0.200	134.4	143.7	1.500	0.0	169.2	0.300	134.4	148.3	1.600	0.0	169.2	0.400	134.4	152.9	1.700	0.0	169.2	0.500	134.4	157.6	1.800	0.0	169.2	0.600	134.4	162.2	1.900	0.0	169.2	0.700	134.4	166.9	2.000	0.0	169.2	0.800	0.0	169.2	2.100	0.0	169.2	0.900	0.0	169.2	2.200	0.0	169.2	1.000	0.0	169.2	2.300	0.0	169.2	1.100	0.0	169.2	2.400	0.0	169.2	1.200	0.0	169.2	2.500	0.0	169.2
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