

Amberfield Water Balance

SUMMARY TABLES

BACKGROUND NOTES FROM AWA ICMP

Perched and transitory water levels do occur across the site.
 Groundwater levels need to be managed to allow free soakage with each device.
 Allophanic interbedded clays creating perched water tables.
 Sandy soils are commonly found in greater thicknesses and frequency in the eastern portion of the site, and cohesive (silt and clay) soils are more prominent in the western portions of the site.
 Soakage testing undertaken near the end of a particularly wet year, i.e. soakage potential may be underestimated.
 Pumice quantities in the soil are low and adverse effects on soakage should be negligible.
 existing stream channel
 baseflow fed stream
 ephemeral-intermittent-permanent
 wet but not a big catchment, doesn't have a defined low flow channel
 not incised
 more of a long wetland in the gully with permanent baseflow
 sandy catchment
 doesn't generate volumes required to create a channel
 gully system due to geomorphological transformation

SUMMARY

Main Result Table

	Rainfall Volume	Runoff Volume	% Converted to Runoff
WQ	9,552.74	55.60	0.6%
50% AEP	28,658.23	718.50	2.5%
10% AEP	43,029.25	1,617.23	3.8%
1% AEP	71,519.89	4,523.21	6.3%

INPUTS

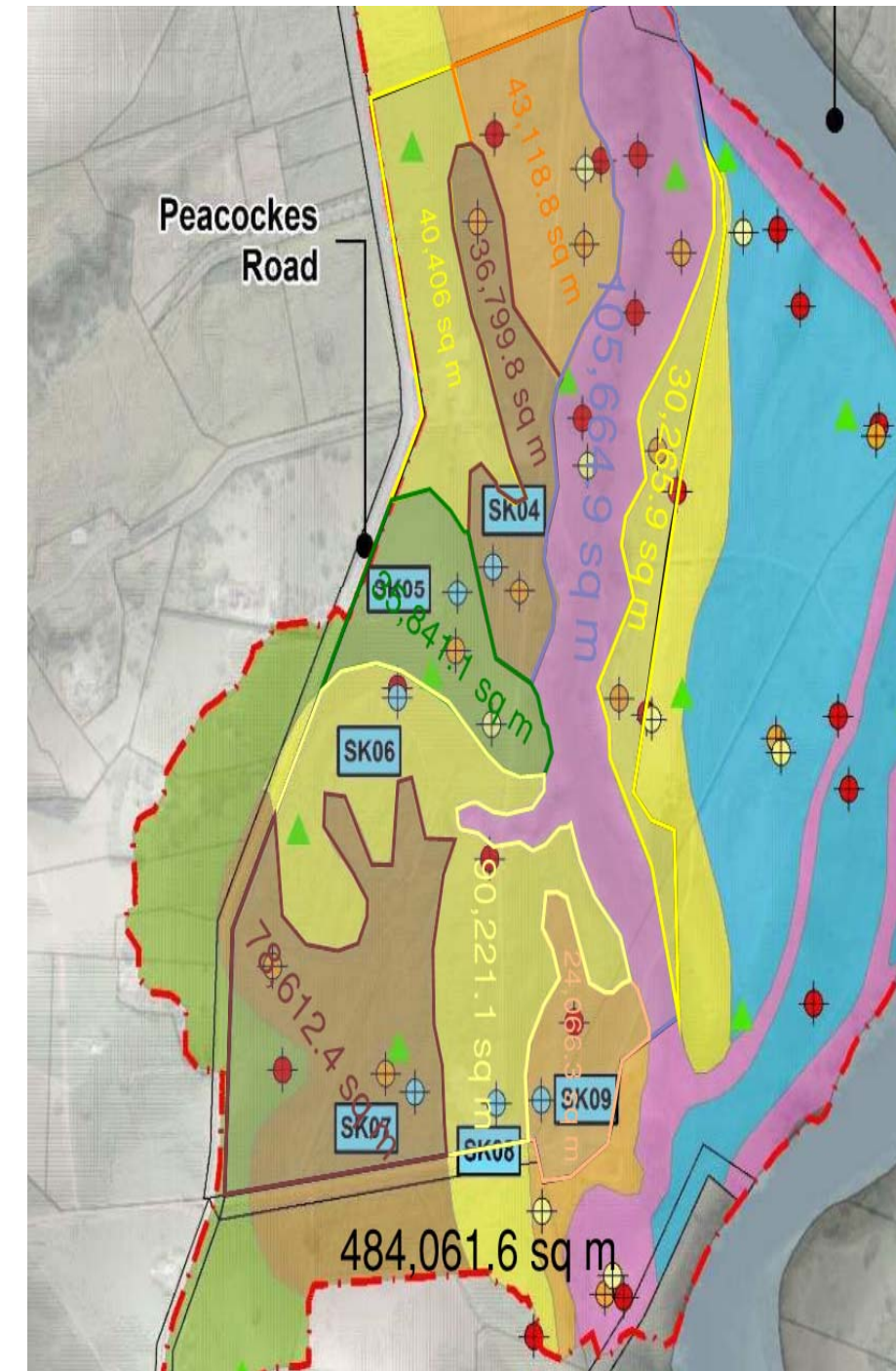
Event	Rainfall				
	WQ	50%	10%	1%	
24hr ED depth (mm)	22.80	68.40	102.70	170.70	
Peak ED intensity mm/hr	15.39	15.39	15.39	15.39	
24hr MPD depth (mm)	25.73	77.20	122.10	211.70	
Peak MPD intensity mm/hr	17.88	53.63	84.82	147.07	

Catchment Areas			
Catchment	Area (ha)	To Stream	
5	12.42	Y	
6	8.24	Y	
7	10.87	N	
8	2.29	N	
9	8.93	N	
10	2.95	Y	
11	18.30	Y	
63.99			
Stream CCA	41.90	ha	

Soil Types		
Soil Type	Measured Area (ha)	Normalised Area (ha)
Gravelly Sand	2.41	2.08
Gravelly Sand	4.31	3.72
Gritty Silt Loam	10.57	9.13
Sandy Loam	9.02	7.79
Sandy Loam	3.03	2.61
Sandy Loam	4.04	3.49
Silt Loam	3.58	3.10
Silt Loam and Clay Loam	7.86	6.79
Silt Loam and Clay Loam	3.68	3.18
Total	48.50	41.90

TOPSOIL DESCRIPTION

- clay loam
- gravelly sand
- gritty silt loam
- loamy sand, sand and sandy loam
- sandy loam
- silt loam
- silt loam and clay loam



Representative Soil Drainage

Test Site	Test mm/hr	Reduction Factor @ 25% mm/hr	Comments
SKT 1	2,320.00	500.00	Loamy Sand
SKT 2	330.00	83.00	Sandy Loam
SKT 3	533.00	133.00	Silt Loam and Clay Loam
SKT 4	146.00	37.00	Silt Loam and Clay Loam
SKT 5	102.00	26.00	Silt Loam
SKT 6	234.00	60.00	Sandy Loam
SKT 7	205.00	50.00	Silt Loam and Clay Loam
SKT 8	372.00	93.00	Sandy Loam
SKT 9	537.00	134.00	Gravelly Sand

Test Site	Test mm/hr	Reduction Factor @ 25% mm/hr	Comments
SKT 1	2320	500	Loamy Sand
SKT 2	330	83	Sandy Loam
SKT 3	533	133	Silt Loam & Clay Loam
SKT 4	146	37	Silt Loam & Clay Loam
SKT 5	102	26	Silt Loam
SKT 6	234	60	Sandy Loam
SKT 7	205	50	Silt Loam & Clay Loam
SKT 8	372	93	Sandy Loam
SKT 9	537	134	Gravelly Sands

Catchment Soil Breakdown

Soil Types	Area per Catchment (Ha)				
	Catchment 5	Catchment 6	Catchment 10	Catchment 11	
Gravelly Sand	4.18	0.30	-	-	2.28
Gritty Silt Loam	0.52	5.92	-	-	-
Silt Loam	-	0.20	2.95	-	-
Sandy Loam	4.21	1.51	-	-	8.56
Silt Loam and Clay Loam	3.52	0.30	-	-	7.46

OUTPUTS

Representative Soil Drainage Rates

Soil Type	Average Test Rate (mm/hr)	Average Reduced Rate (mm/hr)	Area (Ha)	Volume (m ³ /hr)
Gravelly Sand	537.00	134.00	5.80	7,777.37
Gritty Silt Loam	102.00	26.00	9.13	2,373.33
Silt Loam	102.00	26.00	3.10	805.03
Sandy Loam	312.00	78.67	13.90	10,934.09
Silt Loam and Clay Loam	294.67	73.33	9.97	7,311.53
Total			41.90	29,201.35

Table 5 Soakage testing results

Average Reduced Rate (mm/0.5 hr)
34.85

Time of Concentration (for interest - not used in the runoff assessment)

Catchment	T _c (hours)	Infiltration Rate (mm/10min)
5	0.14	15.59
6	0.09	4.57
10	0.28	1.03
11	0.39	20.48

Catchment Summary (ED)

Catchment	Rainfall Volume			
	WQ Event (m ³)	50% AEP Event (m ³)	10% AEP Event (m ³)	1% AEP Event (m ³)
5	2,831.53	8,494.60	12,754.31	21,199.23
6	1,878.26	5,634.79	8,460.43	14,062.27
10	671.69	2,015.06	3,025.54	5,028.82
11	4,171.26	12,513.78	18,788.97	31,229.57
Total	9,552.74	28,658.23	43,029.25	71,519.89

Catchment Summary (MPD)

Catchment	Rainfall Volume			
	WQ Event (m ³)	50% AEP Event (m ³)	10% AEP Event (m ³)	1% AEP Event (m ³)
5	3,195.82	9,587.47	15,163.60	26,291.02
6	2,119.91	6,359.74	10,058.60	17,439.85
10	758.10	2,274.31	3,597.07	6,236.68
11	4,707.91	14,123.74	22,338.20	38,730.52
Total	10,781.75	32,345.26	51,157.46	88,698.07