

Appendix

Appendix A: Criteria for land capability assessment

Table A1: Land versatility assessment for agriculture

PARAMETERS INFLUENCING AGRICULTURAL VERSATILITY		LAND VERSATILITY RATINGS				
		Class 1	Class 2	Class 3	Class 4	Class 5
T : Topography	Slope (%)	0-3	4-10	10-20	20 - 32	> 32
S : Soil	Topsoil texture	L, SL	ZL, CL, ZCL, ZCL-CL, SC	S, LS, CL-HC, SC FSL, SCL, FSCL, FSCL-CL, SL-ZL, LS-SL, CLF, L-LFS, L-CL, SL-L	LC, LC-MC, MC	MHC, HC
	Depth to rock/hardpan (m)	> 1.0		0.5 – 1.0		< 0.5
	pH	>6	5-6	<5		
	Drainage (internal)	Well	Moderately	Rapidly, Rapid, Well-rapid	Imperfectly , Imperfect	Poorly, Very poorly
	Base nutrient status	Eutrophic	Mesotrophic		Dystrophic	
	Permeability	Moderately		Slowly, High		Very slow, Very high
	Topsoil stability (Emerson)	E6, E7, E8	E4, E5	E3	E2	E1
	Soil type (Australian Soil Classification – ASC; order and suborder)	CH AA; PO AL-AM	CH AB; VE AB; VE AD; PO/TE	SO AB; SO AD; PO AM	SO AC-AD; SO-VE AD	

Table A2: Land capability assessment for on-site effluent disposal

Areas capable of absorbing effluent from a standard anaerobic, all-waste, septic tank connected to a single family dwelling (approximate output of 1000 litres per day).

PARAMETERS INFLUENCING EFFLUENT DISPOSAL	LAND CAPABILITY RATINGS				
	Class 1	Class 2	Class 3	Class 4	Class 5
Slope (%)	< 3	3 - 10	11 - 20	21 - 32	> 32
Inundation	Nil	Low (less than once per 100 years)	Moderate (between 50 – 100 years)	High (between 10 – 50 years)	Very high (more than once in 10 years)
Drainage	Rapidly	Well, Moderately-well, Well-rapid	Moderately	Imperfectly	Poorly / Very poorly
Depth to hard rock/impermeable layer (m)	> 0.5	0.3 - 0.5	0.2 – 0.3	0.1 – 0.2	< 0.1
*Permeability (K_{sat} mm/d)	500-1500	500 - 100	100 - 50	50-20; >1500	< 20

*Note: 10 mm/day is equivalent to disposing of 1000 l/d along a 0.5 x 200 m trench

Table A3: Land capability assessment for earthen dams

This table should only be considered for small farm dams to 3000 m³ in capacity which have a top water level less than 3 m above the original ground surface at the upstream side of the wall.

PARAMETERS INFLUENCING THE CONSTRUCTION OF EARTHEN DAMS	LAND CAPABILITY RATINGS				
	Class 1	Class 2	Class 3	Class 4	Class 5
Slope (%)	3 - 10	0 - 3		10 - 20	> 20
Linear shrinkage (%)	< 5	5 - 12	12 - 17	17 - 22	> 22
Depth to hard rock (cm)	> 500	300 - 500	200 - 300	100 - 200	< 100
Permeability (K _{sat} mm/d)	< 5 (Very slowly)	5 – 50 (Slowly)		50 – 500 (Moderately)	> 500 (Highly)
Dispersibility of subsoil (Emerson)	E3		E2, E4, E5		E1, E6, E7, E8
Suitability of subsoil	Very high	High	Moderate	Low	Very low
Susceptibility to slope failure	Very low	Low	Moderate	High	Very high

Table A4: Land capability assessment for secondary roads

Areas capable of being used for the construction of earthen roads for light vehicles without sealed surfaces or concrete drainage and kerbing.

PARAMETERS INFLUENCING SECONDARY ROADS	LAND CAPABILITY RATINGS				
	Class 1	Class 2	Class 3	Class 4	Class 5
Slope (%)	0-1	1-3	3-10	10-32	> 32
Drainage	Rapidly	Well, Moderately-well	Moderately	Imperfectly	Poorly, Very-poorly
Proportion of gravel, stones & boulders (%)	0	1-10	11-20	21-50	> 50
Depth to hard rock (m)	> 1.5	1.5-0.75	0.75-0.5	0.5-0.25	< 0.25
Susceptibility to slope failure	Very low	Low	Moderate	High	Very high
Linear shrinkage (%)	< 6	7 - 12	13 - 17	18 - 22	> 22
Inundation	Nil	Low (less than once per 100 years)	Moderate (between 50 and 100 years)	High (between 10 and 50 years)	Very high (more than once per 10 years)
Dispersibility of subsoil (Emerson > 4% slope) *	E5, E6, E7, E8	E4, E3(1), E3(2)	E3(3), E3(4)	E2(1), E2(2), E2(3)	E2(4), E1
Unified Soil Group	GW, GC, SC	SM, SW, GM	SP, CL, CH, MH, GP	ML	Pt, OH, OL