

# BAK Baker Range Land System

<b>Area:</b>	105.4 km <sup>2</sup>
<b>Landscape:</b>	Dune range oriented north-west to south-east north of Lucindale
<b>Annual rainfall:</b>	575 – 645 mm average
<b>Geology:</b>	Calcreted aeolianite of the Pleistocene Bridgewater Formation barrier shoreline deposits. Weathered Cambrian-Ordovician granites underlie soils in the northern tip.
<b>Main soils:</b>	<p><b>H3</b> (31%) Bleached siliceous sand (sandy Bleached Tenosol)</p> <p><b>I1</b> (21%) Highly leached sand (Aeric Podosol)</p> <p><b>B8</b> (15%) Shallow bleached sand on calcrete (sandy Petrocalcic Rudosol-Tenosol)</p>
<b>Minor soils:</b>	<p><b>RR</b> (7%) Rock or exposed calcrete.</p> <p><b>B6</b> (6%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)</p> <p><b>B7</b> (5%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)</p> <p><b>B3</b> (5%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol)</p> <p><b>G3</b> (4%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)</p>
<b>Summary:</b>	The Baker Range Land System soils are dominated with deep sands (H3, I1) which have water repellence, excessive drainage, wind erodibility and low fertility limitations. Shallow soils over calcrete (B8, RR, B6, B7 and B3) all have low to moderate water holding capacity and are mostly well drained. The shallow B3 and B6 soils when ripped may be suitable for viticulture or horticulture, depending on total soil depth and location in the landscape.

## Soil Landscape Unit summary: Baker Range Land System (BAK)

SLU	% of area	Component	Main soils	Prop#	Notes
EDC	0.3	Undulating rises	B8B3	D	Undulating granite-based rises with shallow bleached siliceous loamy sand or red loamy sand (granitic) over red sandy clay loam on calcrete; 10-30% bare calcrete.  Main soils: <u>Shallow sand on calcrete</u> - <b>B8</b> and <u>Shallow sandy loam on calcrete</u> - <b>B3</b> .
MGE	0.3	Depression	B7B5	D	<b>MGE</b> Depression with shallow sandy loam over poorly structured brown clay on calcrete; or shallow dark clay loam over dark clay on calcrete. 10-30% bare calcrete. <b>MGg</b> Swales with deep sand over brown clay; 10-30% saline and non-saline wet sand over clay soils. <b>MGK</b> Plains with sand over poorly structured brown clay, often shallow on calcrete, or shallow sandy loam over red clay on calcrete on low rises. 10-20% wet swales with deep sand over brown clay.  Main soils: <u>Plains: Sand over friable brown clay on calcrete</u> - <b>B7</b> , <u>Thick sand over clay</u> - <b>G3</b> and <u>Shallow sandy loam over red-brown clay on calcrete</u> - <b>B6</b> . <u>Swales: Thick sand over clay</u> - <b>G3</b> and <u>Wet clay loam</u> - <b>N3</b> . <u>Depressions: Sand over friable brown clay on calcrete</u> - <b>B7</b> and <u>Shallow dark clay loam on limestone</u> - <b>B5</b> .
MGg	0.2	Swale	G3	D	
MGK	2.6	Plain	B7G3B6	V	
		Swale	N3	L	



MHB	25.5	Dune	H3	E	<p><b>MHB</b> Gently sloping calcarenite ridges with deep bleached siliceous sands on dunes; 10-30% over brown sandy clay. Co-dominant are shallow stony rises with shallow siliceous sand over thin red clay on calcrete, or sand over poorly structured brown clay on calcrete; 10-30% sandy loam on red clay on calcrete or bare rock.</p> <p><b>MHC</b> Undulating hills and rises with deep, water repellent, bleached sands or shallow, bleached, sand over calcrete; 10-30% shallow sandy loam over red clay on calcrete or bare calcrete.</p> <p>Main soils:  <i>Dunes:</i> <u>Bleached siliceous sand</u> - <b>H3</b>.  <i>Stony ranges:</i> <u>Shallow sandy loam on calcrete</u> - <b>B3</b> and <u>Sand over friable brown clay on calcrete</u> - <b>B7</b>.  <i>Dune ranges:</i> <u>Bleached siliceous sand</u> - <b>H3</b>, <u>Highly leached sand</u> - <b>I1</b> and <u>Shallow sand on calcrete</u> - <b>B8</b>.</p>
		Stony range	B3B7	E	
MHC	50.2	Dune range	H3I1B8	D	<p><b>MYA</b> Plains with shallow sand over poorly structured brown clay on calcrete; or shallow sand, often bleached, on calcrete.</p> <p>Main soils: <u>Sand over friable brown clay on calcrete</u> - <b>B7</b>, <u>Shallow sand on calcrete</u> - <b>B8</b> and <u>Shallow sandy loam on calcrete</u> - <b>B3</b>.</p>
MYA	0.3	Plain	B7B8B3	D	<p><b>MYA</b> Plains with shallow sand over poorly structured brown clay on calcrete; or shallow sand, often bleached, on calcrete.</p> <p>Main soils: <u>Sand over friable brown clay on calcrete</u> - <b>B7</b>, <u>Shallow sand on calcrete</u> - <b>B8</b> and <u>Shallow sandy loam on calcrete</u> - <b>B3</b>.</p>
NjU	0.7	Plain	G3	V	<p>Plains with deep sand over brown clay; 10-30% each of deep sand over organic pan or brown clay, shallow sand, bleached on calcrete or sand over poorly structured brown clay on calcrete. 10-20% swamps with mostly wet deep clay loam over dark clay; 10-30% shallow loam over yellow-grey clay on calcrete.</p> <p>Main soils:  <i>Plains:</i> <u>Thick sand over clay</u> - <b>G3</b>.  <i>Swamps:</i> <u>Wet clay loam</u> - <b>N3</b> and <u>Deep hard gradational sandy loam</u> - <b>M4</b>.  <i>Stony rises:</i> <u>Shallow sandy loam on calcrete</u> - <b>B3</b>.</p>
		Swamp	N3M4	L	
		Stony rise	B3	L	
OHD	14.0	Dune	I1H3	D	<p>Low dunes with deep, water repellent acid, bleached siliceous sand. &lt;10% stony rises with shallow sandy loam, 10-30% shallow sandy loam over thin red clay, on calcreted calcarenite, or bare calcrete outcrop.</p> <p>Main soils:  <i>Dunes:</i> <u>Highly leached sand</u> - <b>I1</b> and <u>Bleached siliceous sand</u> - <b>H3</b>.  <i>Stony rises:</i> <u>Shallow sandy loam on calcrete</u> - <b>B3</b>.</p>
		Stony rise	B3	M	
OPG	0.7	Low dune	G2G3	V	<p>Low dunes with deep bleached sand over brown clay. 20-30% swales with shallow sand over brown clay on calcrete, or deep sand over brown clay; 10-30% deep bleached sand.</p> <p>Main soils:  <i>Low dunes:</i> <u>Bleached sand over sandy clay loam</u> - <b>G2</b> and <u>Thick sand over clay</u> - <b>G3</b>.  <i>Swales:</i> <u>Sand over friable brown clay on calcrete</u> - <b>B7</b> and <u>Thick sand over clay</u> - <b>G3</b>.</p>
		Swale	B7G3	C	
XI-	0.2	Lake	WW	D	Water filled lakes or swamps.
XqC	0.3	Swamp	N3N1 M2	D	<p>Swamps with organic loam and peat, often over dark clay; 10-30% water filled or sandy rise with deep sand over brown clay.</p> <p>Main soils: <u>Wet clay loam</u> - <b>N3</b>, <u>Peaty soil</u> - <b>N1</b> and <u>Deep friable gradational clay loam</u> - <b>M2</b>.</p>



XuC	0.1	Swamp	N3	D	<p><b>XuC</b> Swamps with mostly non saline wet, non-peaty, sand over dark clay; 10-30% peat soils.</p> <p><b>Xud</b> Non-peaty dark clay loamy swamps with 20-30% sandy rises with deep sand over brown clay, or deep sand on coffee rock.</p> <p>Main soils:  <u>Swamps: Wet clay loam - N3.</u>  <u>Sandy rise: Thick sand over clay - G3 and Wet highly leached sand - I2.</u></p>
Xud	0.3	Swamp Sandy rise	N3 G3I2	V L	
XwC	0.8	Swamp	N3N2	D	Swamps with wet non-saline and moderately saline sandy loam over dark clay; 10-30% water filled or with bleached sand over brown clay.
Xwc	2.2	Swamp	N3N2B2	D	Swamps with wet non-saline and moderately saline sandy loam over dark clay; 10-30% water filled or with bleached sand over brown clay. Soils are shallow over calcrete.
ZO-	1.2	Swamp	B5B9	D	Swamps with moderately saline dark clay or clay loam over dark or yellow-grey clay on calcrete; 10-30% shallow clay loam over poorly structured brown clay on calcrete. 2-10% patches of high salinity.
					Main soils: <u>Shallow dark clay loam on limestone - B5</u> and <u>Shallow clay loam over brown or dark clay on calcrete - B9.</u>

# PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

D	Dominant in extent (>90% of SLU)	C	Common in extent (20–30% of SLU)
V	Very extensive in extent (60–90% of SLU)	L	Limited in extent (10–20% of SLU)
E	Extensive in extent (30–60% of SLU)	M	Minor in extent (<10% of SLU)

### Detailed soil profile descriptions:

- B2** Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)  
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.
- B3** Shallow sandy loam on calcrete (Petrocalcic Rudosol)  
Medium thickness non calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.
- B5** Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)  
Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.
- B6** Shallow sandy loam over red-brown clay on calcrete (Petrocalcic, Red Kandosol)  
Medium thickness sandy loam with slight ironstone gravel overlying a weakly structured reddish brown sandy clay on calcarenite within 50 cm - rises.
- B7** Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)  
Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.



- B8** Thick bleached sand over calcrete (Petrocalcic, Bleached-Leptic Tenosol)  
Thick bleached sand over calcarenite.
- B9** Shallow clay loam over brown or dark clay on calcrete (Clay loamy Petrocalcic Sodosol)
- G2** Bleached sand over sandy clay loam (sandy Brown-Red Chromosol)  
Sandy texture contrast soil with a bleached A2 and a friable brown-red sandy clay loam to sandy loam subsoil.
- G3** Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)  
Thick bleached sand with an organically darkened surface abruptly overlying a massive to coarsely structured brown to reddish yellow sandy clay to clay, calcareous with depth - rises.
- H3** Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)  
Grey sand over a very thick bleached sand grading to yellow sand continuing below 100 cm.
- I1** Highly leached sand (Fragic, Pipey, Aeric Podosol)  
Grey sand with a very thick bleached A2 layer, over dark brown and yellow massive soft to semi-hard clayey sand (coffee rock), grading to softer yellow and brown sand to sandy clay loam from about 80 cm.
- I2** Wet highly leached sand (Fragic, Humic, Aquic Podosol)  
Grey sand with a thick bleached A2 horizon, overlying a thin to thick layer of coffee rock, grading to pale brown sand sharply overlying a grey, brown and yellow mottled sandy clay loam to light clay.
- M2** Deep friable gradational clay loam (Red-Brown-Grey-Black Dermosol)  
Deep well structured red clay loamy soil.
- M4** Deep hard gradational sandy loam (Hard Brown-Dark Kandosol-Dermosol)  
Deep dark brown loamy to clay loamy soil grading to clay at depth. Hardsetting surface often with prismatic structures in the subsoil.
- N1** Peat (Organosol)  
Peaty soil.
- N2c** Wet saline clay loam (Dermosolic, Salic Hydrosol)  
Medium thickness dark grey to black clay loam to clay grading to well-structured dark grey clay with minor carbonates and a water table within 100 cm.
- N3** Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
- |            |               |
|------------|---------------|
| <b>N3c</b> | Wet <b>G3</b> |
| <b>N3d</b> | Wet <b>B5</b> |
| <b>N3e</b> | Wet <b>B7</b> |
- WW** Water

**Further information:** [DEWNR Soil and Land Program](#)

