

SHALLOW SAND OVER FERRICRETE

General Description: *Shallow sand with over ferricrete 'stones' and 'cobbles' (6-60 cm, in the form of cemented ironstone gravel) with ironstone gravel in solution cavities (<2-60 mm)*

Subgroup soil: J3 – J2.

Landform: Plateau (summit) surface.

Substrate: Below ferricrete: mottled clay (deeply weathered material).

Vegetation: Mallee scrub.

Type Site:	Site No.:	CK023	1:50,000 mapsheet:	6326-3 (Vivonne)
	Hundred:	Newland	Easting:	684530
	Section:	91	Northing:	6023900
	Sampling date:	16/12/04	Annual rainfall:	695 mm average

Gently undulating plain (plateau surface); soft sandy surface with some ferricrete fragments (6-30 cm) brought to surface by ripping.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-9	Dark brown strongly water repellent soft loamy sand with minor ironstone gravel (<2-20 mm). Clear to:
9-28	Dark yellow brown water repellent loamy sand with 2-10% ironstone gravel (<2-20 mm). Abrupt to:
28-45+	More than 50% ferricrete cobbles and stones (6-60 cm, in the form of cemented ironstone gravel), and ironstone gravel (<2-60 mm) with some clayey sand in solution cavities.

Classification: Basic, Petroferric, Leptic Tenosol; thin, non-gravelly, sandy/-, shallow.



Summary of Properties

- Drainage:** Moderately well drained. It is likely that water would 'perch' on ferricrete layer..
- Fertility:** Inherent fertility is very low. The sum of cations data indicate the very low nutrient retention capacity of this sandy and acidic soil. P, K, S and the trace elements B and Zn all have low levels on this unfertilised off-paddock site. Very high reactive Fe levels indicate high levels of P fixation. Organic matter levels are good, however, this is an indication of low microbial activity.
- pH:** Surface soil is strongly acidic; subsurface layers are acidic.
- Rooting depth:** Viewed to 45 cm in pit.
- Barriers to root growth:**
- Physical:** Ferricrete fragments at 28+ cm restrict root growth.
 - Chemical:** General low fertility.
- Waterholding capacity:** Low.
Total available: approx 32 mm
- Seedling emergence:** Good. Although water repellence would result in uneven wetting and possibly patchy germination and seedling emergence.
- Workability:** Good.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	React. Iron mg/kg	Al CaCl ₂ mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg					Est. ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	Al	
0-9	5.6	4.4	0	0.034	0.32	1.5	3	42	3.1	0.2	494	1.6	0.27	71.6	2.17	0.30	2.02	1.32	0.42	0.09	0.09	0.10	na
9-28	6.0	4.9	0	0.022	0.16	0.74	<1	32	3.5	0.3	1856	0.9	0.30	43.5	2.56	<0.05	0.71	0.33	0.18	0.07	0.05	0.08	na
28-45+	6.3	5.1	0	0.021	0.17	0.39	<1	32	2.9	0.3	1027	0.2	0.70	13.5	2.88	0.25	0.60	0.26	0.21	0.04	0.06	0.03	na

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a measure of the soil's capacity to store and release major nutrient elements.
ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC, in this case estimated by the sum of cations.

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

